SECTION 00 0101
HRA PROJECT TITLE PAGE

HRA MASTER SPECIFICATION 1185 Burr

INVEST SAINT PAUL INITITIVE
NEIGHBORHOOD STABILIZATION PROGRAMS
AND REBUILDING PLAN 2009-2013
Payne Phalen

OWNER

The Housing and Redevelopment Authority of Saint Paul, Minnesota
25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Marty McCarthy
(651) 266- 6552
Marty.McCarthy@ci.stpaul.mn.us

HRA SCOPE WRITER

Greater Frogtown CDC
533 N. Dale
Patty Lammers
651-789-7485
patty@greaterfrogtowncdc.org

HRA Construction Manager

Greater Frogtown CDC
533 N. Dale
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651-789-7485
patty@greaterfrogtowncdc.org

SECTION 00 0110

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SECTION 00 4002
HRA BID INVITATION

PART 1 GENERAL

1.01 CONTACT TRANSLATION

A. In Hmong - Ceeb toom. Yog koj xav tau kev pab txhais cov xov no rau koj dawb, Amy Filice 651-266-6568;

B. In Spanish - Atención. Si desea recibir asistencia gratuita para traducer esta información, llame a Amy Filice 651-266-6568;

C. In Somali - Ogow. Haddii aad dooneyso in lagaa kaalmeeyo tarjamadda macluumaadkani oo lacag la' aan wac, Amy Filice 651-266-6568.

1.02 PROJECT SUMMARY

A. Project description: This is a Residential Renovation project located at HRA Master Specification 971 Fremont 6_25_12. This project is funded by Neighborhood Stabilization Program through the The Housing and Redevelopment Authority of Saint Paul, Minnesota. This project is not required to conform to Federal and/or Little Davis Bacon requirements.

1.03 NOTICE TO PROSPECTIVE BIDDERS

A. These documents constitute an invitation to bid to General Contractors for the construction of the project described within this bid manual.

1.04 OWNERSHIP INFORMATION

A. The Owner, The Housing and Redevelopment Authority of Saint Paul, Minnesota, hereinafter, referred to as Owner.

B. Owner's Project Manager: Marty McCarthy
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Phone Number: (651) 266- 6552
Email: marty.mccarthy@ci.stpaul.mn.us

1.05 OWNER'S CONSULTANT(S)

Owner's Project Specification Consultant: Greater Frogtown CDC
1. Specification Writer's Name: Patty Lammers
2. Address: 533 N. Dale, St. Paul, MN 55103
3. Phone Number: 651-789-7485
Email: patty@greaterfrogtowncdc.org

A. Owner's Construction Manager Consultant: Greater Frogtown CDC
1. Construction Manager's Name: Patty Lammers
2. Address: 533 N. Dale, St. Paul, MN 55103
3. Phone: 651-789-7485
4. Email: patty@greaterfrogtowncdc.org

1.06 IMPORTANT BID DATES

A. Bids Issued: 8/31/12

B. Mandatory Pre-Bid Site Tour: Insert 09/07/2012 from Insert 9:00 am to 10:30 am

C. **BID DUE DATE ON OR BEFORE: Insert 09/21/2012 no later than 2:00 PM local time. Bid opening at 2:15 p.m. on 8/10/12**

D. Bid Delivery Location: The offices of The Housing and Redevelopment Authority of Saint Paul, Minnesota
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Suite: 1100

E. Public Bid Opening and Location: The Housing and Redevelopment Authority of Saint Paul, Minnesota

Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Suite: 1100

F. Executed Contract: Within 30 days of the bid award.

G. Construction Start Date (Approximate): ASAP after contract execution

H. Construction Completion Date: 120 days from the time of issued Notice to Proceed.

END OF BID INVITATION

SECTION 00 4003

HRA INSTRUCTIONS FOR BIDDERS

PART 1 GENERAL BID DIRECTIONS

1.01 EACH BIDDER SHALL FULLY INFORM HIM / HERSELF AND ANY SUBCONTRACTORS PRIOR TO BIDDING AS TO ALL EXISTING CONDITIONS AND LIMITATIONS INCLUDING COMPLIANCE REQUIREMENTS UNDER WHICH THE WORK IS TO BE PERFORMED AND SHALL INCLUDE IN THE BID A SUM TO COVER THE COST OF ALL ITEMS NECESSARY TO PERFORM THE WORK AS SET FORTH IN THE BID PROJECT MANUAL. THE SUBMISSION OF A BID SHALL BE CONSTRUED AS CONCLUSIVE EVIDENCE THAT THE BIDDER HAS MADE SUCH EXAMINATION.

1.02 BID FORMS

A. The Bid Submission forms are available online at http://www.stpaul.gov/nsp.

B. Each bid must be submitted on the Bid Submission forms identified in the provided checklist. It is expected that the Contractor retain a copy of their entire submittal for their records. The copy of the bid submitted must be signed at every place that a signature is requested.

1.03 CORRECTIONS

A. Erasures or other changes in the bid must be dated and initialed over the signature of the bidder.

1.04 BID ENVELOPE

A. Place bid in envelope with the contractor name and address in the upper left-hand corner as the return address, and list the property address in the middle of the envelope as the addressee. Seal envelope.

1.05 INTERPRETATIONS OF SCOPE OF WORK

A. Every request for an interpretation shall be in writing, unless otherwise documented by the Specification Writer. Questions will be taken until 3 days before bids are due.

B. Interpretations will be in the form of an addenda which will be on file at the website, and in the offices of the Specification Writer at least three calendar days before bids are opened.

C. It shall be the bidder's responsibility to make inquiry as to addenda issued.
   1. All such addenda shall become a part of the contract and all bidders shall be bound by such addenda.

1.06 CONFLICT WITH DOCUMENTS

A. When a conflict arises between the Drawings or the Scope of Work, the Drawings shall govern.

1.07 MATERIALS APPROVED:

A. Where items of equipment and material are specifically identified herein by a trade name, model or catalog number, only such specified items may be used in the base bid.

B. Contractors desiring approval of substitute products may submit data cut sheets and product information for approval during the bidding cycle.

C. Contractors will be notified only by addendum of additional approved products.

D. Material identifications made in work specifications are considered as minimal quality for acceptance in bidding and installation.

1.08 ALLOWANCES:

A. The Contractor shall include in the bid proposal the cash allowances listed.

B. Unless otherwise indicated, the lump sum amount shall be for the material / product.

C. Labor to install the material / product must be submitted separately.

1.09 ALTERNATES:

A. The Contractor must submit bids for each alternate listed in the Alternates List.

B. If pricing is not listed for Alternates the bid may be disqualified.

1.10 TIME FOR RECEIVING BIDS:

A. Bids are to be delivered to the HRA's office.

B. Bids received prior to the time of opening will be securely kept.

C. Bids received by phone or fax will not be considered.

D. Modification of bids already submitted will be considered if received prior to the hour set for receiving the bids and written confirmation of such modification - with the signature of the bidder - is placed in the mail and postmarked and / or delivered to the HRA prior to the time set for bid opening.

1.11 OPENING OF BIDS:

A. At the time and place fixed for the opening of bids, every bid received within the time fixed for receiving bids will be opened irrespective of any irregularities.

B. The opening of the bids will be an "open process" (open to the public).

1.12 WITHDRAWAL OF BIDS:

A. Bids may be withdrawn in writing, by phone, or by fax prior to the time fixed for opening; provided that written confirmation of any phoned or faxed withdrawal is placed in the mail and postmarked and / or delivered prior to the time set for bid opening.

B. Negligence on the part of the bidder in preparing their bid confers no right of withdrawal or modification of his bid after such bid has been opened.

PART 2 BID ANALYSIS PROCESS

2.01 CONTRACTOR SELECTION DATE: EARLIEST PRACTICAL DATE

A. This project is funded by the Neighborhood Stabilization Program (NSP), a federal stimulus program created to rehabilitate vacant housing or construct new housing on vacant lots within targeted areas of the City of Saint Paul.

B. The Housing and Redevelopment Authority of Saint Paul, Minnesota reserves the right to check the qualifications of contractors for each project; previous experience working on projects with the The Housing and Redevelopment Authority of Saint Paul, Minnesota, will not automatically deem a contractor qualified.

2.02 MINIMUM CONTRACTOR QUALIFICATIONS

A. Please note the following minimum qualifications that apply to all bidders:

1. **Quality Workmanship and Qualifications**
   a. Three references from jobs with similar work (include on Contractor Qualification form)
   b. Two financial references (included on Contractor Qualification Form)
   c. At least 2 years of experience as a Licensed General Contractor (HRA will verify)
      1) make sure to provide GC license number in the bid documents.
   d. Review of standing with Secretary of State, Federal Excluded Parties list, City of Saint Paul Debarment list, Department of Labor and Industry, Better Business Bureau (HRA will verify)
   e. Houses with historic features or located within a historic district may require demonstration of quality workmanship for historic renovation at the discretion of HRA staff.
2. **Financial Capacity**
   a. Demonstrated ability to pay two months of construction costs for each project awarded (these amounts are added together if more than one project is under construction). Financial capacity documentation must be in the name of the General Contractors organization or the principal of that organization.
      1) For a 120 day project, the contractor shall demonstrate the ability to pay 50% of bid amount.

2) For a 90 day project, the contractor shall demonstrate the ability to pay 65% of the bid amount.
3) Demonstration of capacity can be in the form of:
(a) Line of credit from banking or lending institution
(b) Cash balances from banking or lending institution

3. **Ability to Perform**
a. Up-to-date submittals to Affirmative Action, Section 3, and Vendor Outreach programs.
b. Adherence to timelines confirmed from professional references.
c. Use of certified subcontractors for environmental remediation including:
1) Insulation: contractor must be on Xcel Energy approved contractor list
2) Asbestos: contractor must be certified for asbestos removal by the State of Minnesota
3) Lead: either general contractor or subcontractor must be certified for lead abatement by the State of Minnesota
4) Radon: contractor must be on Minnesota Department of Health approved radon mitigation list.

4. **Bid Award Policy**
a. Contractors that meet the criteria for qualification above, yet have not worked with The Housing and Redevelopment Authority of Saint Paul, Minnesota on a Neighborhood Stabilization Program project previously will initially be awarded one house, even if the contractor is low bidder for more than one house.
b. Once the contractor demonstrates quality workmanship, financial capacity, and ability to perform timely completion, they may be awarded more than one house at the same time for subsequent bids on a case-by-case basis.

5. **Other Qualifications**
a. Each property has its own unique characteristics and challenges. Variables include items relating to environmental conditions, historic nature of structures, etc.
b. Depending on the specific property , there may be other qualifications needed by the bidder which will be specified by the HRA in its request for bids.

PART 3 POST AWARD REQUIRMENTS

3.01 CONSTRUCTION CONTRACT REQUIRMENTS

A. The bidder agrees that, if selected by the HRA, the bidder will enter into a contract with the HRA no later than 30 calendar days from bid award and will submit the following information to the HRA as a condition to entering into that contract; refer to Bid Rehab Manual for attachments:
1. Certificates of Insurance as required by the Construction Contract and proof of Insurance and Bonding.
2. Final Sworn Construction Statement Affidavit and Sworn Construction Statement that list contractors, material suppliers, and subcontractors, who will work under the contract and the cost of their work.
3. Proof of a valid license as a Residential builder in the State of Minnesota and proof of valid licenses as required by the City of Saint Paul for work to be done.
4. Bidders may be required to submit payment and performance bonds as a condition of the construction contract. Verify with Scope Writer prior to submitting bid.
5. Proof of compliance with requirements attached for Affirmative Action, Vendor Outreach Program, and Section 3, including an Acknowledgement and Final Section 3 Action Plan.
6. Construction Schedule must be submitted to the Insert Construction Managment Firm Name to enter into the Contract.

B. Attendance of a Pre-Construction Conference
1. The selected Contractor and all Subcontractors will be required to attend a Pre-Construction Conference.

2. Time, date, and place of the Pre-Construction Conference will be announced by the Insert Construction Managment Firm Name and/or HRA.

C. Computerized System for Compliance Tracking and Reporting:
   1. The Contractor is required to use the B2Gnow/LCPtracker reporting system. Refer to attachment.

PART 3 WAGE REQUIREMENTS

4.01 THE FOLLOWING ARE WAGE REQUIREMENTS ASSOCIATED WITH THIS PROJECTS

A. Federal Davis-Bacon and/or Little Davis-Bacon Wages are not required for this project.

END OF SECTION

SECTION 00 4101

HRA BID SUBMISSION DOCUMENTS

SECTION 1 GENERAL

1.01 BID SUBMISSION DOCUMENTS, LOCATED AT ://WWW.STPAUL.GOV/NSP

A. Bid Submittal Checklist
B. Bid Cover Sheet
C. Bid Proposal and Non-Collusive Affidavit
D. Preliminary Section-3 Action Plan
E. Contractor Application / Statement of Qualifications
F. Itemized Cost Breakdown and Scope of Work Bid (Section 004102)

END OF SECTION

SECTION 00 4102

HRA LINE ITEM BID SHEET

PART 1 MANUAL BID SHEET - LINE ITEM BREAKDOWN OF WORK

DIVISION 01 – ALTERNATES

09 6800 Carpeting	$_____
09 6219 Laminate Flooring	$_____

DIVISION 02 - EXISTING CONDITIONS

024100 - Demolition	$_____
028200 - Asbestos Remediation	$_____
028313 - Lead Hazard Control Activities	$_____
028500 - Radon Mitigation	$_____

DIVISION 03 - CONCRETE

030100 - Maintenance of Concrete	$_____
033000 - Cast in Place Concrete	$_____

DIVISION 04 - MASONRY

040100 - Maintenance of Masonry	$_____
042300 - Glass Unit Masonry	$_____

DIVISION 06 - WOOD, PLASTICS AND COMPOSITES

061000 - Rough Carpentry	$_____
062000 - Finish Carpentry	$_____

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

072119 - Foamed-In-Place Insulation	$_____
072126 - Blown Insulation	$_____
072500 - Weather Barriers	$_____
072700 - Air Barrier System	$_____
073113 - Asphalt Shingles	$_____
074646 - Fiber Cement Siding	$_____
076200 - Sheet Metal Flashing and Trim	$_____
077123 - Manufactured Gutters and Downspouts	$_____

DIVISION 08 - OPENINGS

081100 - Exterior Insulated Metal Doors and Frames	$_____
081429 - Wood Doors	$_____
083323 - Overhead Garage Door	$_____
085313 - Vinyl Windows	$_____

DIVISION 09 - FINISHES

090120 - Repair of Plaster and Gypsum Board	$_____
090160 - Hardwood Flooring Restoration	$_____
092116 - Gypsum Board	$_____
093000 - Tiling	$_____
096800 – Carpeting (alt. 1)	$_____
096219 – Laminate Flooring (alt. 2)	$_____

099000 - Painting and Coating $_____

099723 - Concrete and Masonry Coatings $_____

DIVISION 10 - SPECIALTIES

105623 - Closet Storage Shelving $_____

DIVISION 11 - EQUIPMENT

113100 - HRA Residential Appliances $_____

DIVISION 12 - FURNISHINGS

121110 - HRA Mail Box and House Numbers $_____

121111 - Bathroom Furnishings $_____

123530 - Residential Casework $_____

DIVISION 22 - PLUMBING

223000 - Plumbing Equipment $_____

224000 - Plumbing Fixtures $_____

DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING

230000 - Residential Ventilation $_____

235400 - Forced Air Furnace and Ducts $_____

236213 – Forced Air A/C $_____

DIVISION 26 - ELECTRICAL

261001 - Power, Wiring and Devices $_____

265101 - HRA Lighting $_____

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

281600 - Intrusion Detection $_____

DIVISION 31 - EARTHWORK

312200 - Grading $_____

DIVISION 32 - EXTERIOR IMPROVMENTS

321313 - Concrete Paving $_____

323223 - Segmental Retaining Walls $_____

329223 - Sodding $_____

329300 - Planting $_____

END OF SECTION

SECTION 01 0010

HRA GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 CONTRACTOR'S RESPONSIBLITY

A. All labor, material, supplies, tools, or other costs or items needed for complete construction of the project, including permits, temporary facilities, safety, security and utilities during construction, are the responsibility of the Contractor.

B. The General Contractor and each Subcontractor shall inspect the existing conditions that affect its work before starting. Commencing work signifies acceptance of the previous work. All measurements and dimensions indicated in the Drawings and Specifications are to be verified prior to bid submittal and construction.

C. The General Contractor shall be responsible for the coordination of all subcontractors working on, or furnishing material for use on this project. In addition, the General Contractor shall be responsible for the coordination of all work performed under separate contracts.

1.02 CONTRACTOR'S USE OF PREMISES

A. During the construction period the General Contractor and its Subcontractors shall have full use of the premises for construction operations, including use of the site. All use of the site shall be under control and supervision of the General Contractor.

B. General Contractor and its Subcontractors will be limited to construction work between the hours of 7:00 am and 6:00 pm on weekdays and 8:00 am to 4:00 pm on Saturday. Work at any other times will be allowed only with the Owner's and Project Manager's consent.

1.03 MATERIALS & MATERIAL STORAGE

A. The General Contractor shall provide all materials, hardware, and fixtures required to accomplish the Scope of Work, unless otherwise indicated.

B. The General Contractor shall use materials specified throughout unless approved in writing by Owner and Project Manager before ordering and installing.

C. The General Contractor is responsible for verification of all measurements. Materials transported to the job site and stored are the General Contractor's responsibility until installed and accepted by the Owner and Project Manager.

D. The General Contractor shall deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

E. Damaged or stolen materials and equipment must be replaced as part of the work at no additional cost to the Owner. Damaged property that is removed shall belong to the General Contractor, unless otherwise stated in writing.

PART 2 PERFORMANCE REQUIRMENTS

2.01 ENERGY CONSERVATION

A. General
   1. This property must go through Xcel Energy's Home Performance with Energy Star program.
   2. This means that all insulation and HVAC work must be performed by Xcel Energy's approved contractor list.
   3. General Contractors that are on the Home Performance list may choose Subcontractors that are not on the list, but those General Contractors will be held responsible for all work completed.
   4. The "Specifications for Energy Improvement Upgrades" provided by the Neighborhood Energy Connection (See appendix) are a part of the Scope of Work for this property.
   5. Any discrepancies between the Scope of Work and NEC's specifications are to be clarified during the bid process.

B. Provide an Energy Efficient Lighting
   1. All fixtures should have energy efficient CFLs or LED lamps that are within the maximum wattage allowable.
   2. The Owner and Project Manager shall select specific locations of fixtures and switches in each area.
   3. All lighting fixtures will be purchased new, unless otherwise indicated in the scope of work.
   4. No plastic lighting fixtures are acceptable.
   5. No fluorescent tube light fixtures are acceptable in living spaces.
   6. Provide light bulbs for all fixtures. All light fixtures are to have color corrected bulbs. Light bulbs that are viewable within fixtures will be a globe or candelabra style CFL.
   7. Provide and install lighting fixtures and switches.
   8. Review fixtures with Owner and Project Manager prior to installation.
   9. All electrical outlets and cover plates are to be replaced throughout the building, unless otherwise indicated in the scope of work.

2.02 ENERGY EFFICIENT APPLIANCES

A. All appliances must be purchased new and be Energy STAR certified or high efficiency models when Energy STAR certification is not possible.

B. High-efficiency appliances meet the following standards:

C. Clothes washers must have a CEE Tier 2 or higher, a minimum Energy Factor of 2.0 or greater, and a water factor 6.0 or less.

D. Clothes Dryers must be a minimum 7.0 cubic feet capacity, have a sensor dry system, and have 5 Temperature Levels - High, Medium High, Medium, Low & Ultra Low

E. Dishwashers must be CEE Tier 2 or higher, with a minimum Energy Factor of 0.68 or greater, and a maximum annual energy use of 325 kilowatt-hours or less.

2.03 LOW FLOW PLUMBING FIXTURES

A. New plumbing fixtures should be water conserving fixtures with a faucet flow rate of 2.0 GPM or less and a commode flush rate of 1.3 GPF or less.

PART 3 PRICE AND PAYMENT PROCEDURES

3.01 SCHEDULE OF VALUES

A. Form to be used: Sworn Construction Statement.

3.02 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Execute certification/pay application by signature of authorized officer.

C. Submit two copies of each Application for Payment to Construction Manager.

PART 4 CONTRACT MODIFICATION PROCEDURES

4.01 HRA WINTER WORK POLICY

A. The Housing and Redevelopment Authority of the City of St. Paul (HRA) recognizes that there are weather related exterior items that cannot be completed in winter conditions ("Weather Conditional Work"), including but not limited to:
   1. Exterior painting
   2. Sod
   3. Foundation plantings
   4. Rain garden installation
   5. Concrete sidewalks, steps, landings, curbs, garage slabs, and asphalt driveways

B. The HRA defines winter conditions as "temperatures consistently below a high of 50 degrees Fahrenheit". Winter conditions are typically in effect from November 15th through April 15th each year, although there is potential for an earlier or later start and end date depending on weather.

C. In the case of NSP homes where a notice to proceed is issued between October and February, the time parameter of winter conditions could mean that the entire timeline for construction completion (typically 90-120 days) is within winter conditions.

D. It is the responsibility of the contractor to communicate, to the Owner, the exterior line items in the scope of work that are Weather Conditional Work as a component of the timeline submission required prior to issuance of a notice to proceed.

E. Contractors are also responsible for ensuring that all Weather Conditional Work is completed within the manufacturer's or industry standards recommended temperature range.

F. The Contractor is responsible for prioritizing Weather Related Work when winter conditions are not present, in order to complete the house within the construction timeline whenever possible.

G. The HRA's objective is to ensure that remodeling work on NSP projects is substantially complete within the timeline for construction completion (90-120 days) so that the project can be issued a certificate of occupancy and sold to a new homeowner; the contractor is responsible for ensuring that temporary, structurally sound solutions are implemented when Weather Related Work will effect the ability to secure a Certificate of Occupancy.

H. In the event that winter conditions are present throughout the 120 day construction contract period, the HRA will escrow 1 and 1/2 times the cost for Weather Conditional Work (150%), to be completed within 30 days of the end of winter conditions.

4.02 SUBSTITUTIONS

A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the General Contractor after award of the Contract are considered to be requests for substitutions.

B. Submit requests according to procedures required for change-order proposals.

C. Substitution requests shall include a complete list of changes or modifications needed in the Scope of Work in order to accommodate the proposed substitution.

D. Provide samples and product data, including drawings and descriptions of products as well as fabrication and installation procedures, where applicable or where requested by the Owner or Project Manager.

E. Indicate the substitution's effect on the Contractor's Construction Schedule, if any. Indicate cost information, including a proposal of the net change, if any, in the Contract Sum. Acceptance will be in the form of a written Change Order signed by the Owner and Project Manager.

PART 5 COMPLIANCE INFORMATION AND REQUIRMENTS

5.01 SEE HRA NSP WEBSITE FOR COMPLIANCE REQUIRMENTS.

A. ://www.stpaul.gov/nsp

B. Review the document labeled: *Section II - Compliance Information and Requirements.*
   1. It contains additional information on:
      a. Insurance
      b. B2Gnow/LCP Tracker, Contract Compliance Monitoring System
      c. Vendor Outreach Program
      d. Affirmative Action
      e. Sustainable Green Policy
      f. Section 3
      g. Two Bid Policy
      h. Limited English Policy
      i. Xcel Energy Participating Contractors' List
      j. Radon Mitigation Contractors' List

5.02 SECURITY PROCEDURES

A. General Contractor is responsible for maintaining security of the site, including:
   1. locking buildings at the end of each work day;

2. boarding window or door openings;
3. installing security fencing;
4. providing temporary barricades, bracing or railings;
5. and any other work or facilities necessary to maintain a safe and secure site, including compliance with all health, safety, building, and other codes and laws.

B. Any tools or materials or other property stored on the site prior to installation are the responsibility of the General Contractor and its Subcontractors are responsible for insuring their own such property against loss by theft or other cause.

5.03 JOB CONDITIONS

A. The General Contractor shall notify the Owner and Project Manager of repair not covered in the Scope of Work that is necessary for satisfactory completion of the Project.

B. Defects that become evident as work progresses shall be reported not concealed.

C. Ensure safe passage of all employees during the course of demolition or other persons as necessary by erecting barriers, bracing, or other temporary supports as required.

5.04 SAFETY AND CLEAN UP

A. The General Contractor must keep the site clean at all times during construction.

B. In no event can debris be stored outside overnight unless it is inside a dumpster.

C. All floors are to be picked up and kept broom clean at the end of the work day.

D. No combustible debris shall be thrown, stored, or burned on the property, adjacent parcels, sidewalks, streets, or alleys.

E. Debris created from work at the property must be disposed of immediately.

F. Any debris caused by the General Contractor or its Subcontractor shall be removed from the work area in the General Contractor's containers and disposed of off site by the General Contractor.

PART 6 SPECIAL PROCEDURES

6.01 ASBESTOS ABATEMENT,

A. If asbestos is found on this project follow the necessary requirements for proper abatement. A contractor must be licensed by the Minnesota Department of Health to perform asbestos-related work. Asbestos-related work includes the work area preparation, enclosure, removal, or encapsulation of asbestos-containing material.

6.02 LOW VOC, SEE SECTION 01 6116

6.03 LEAD BASED PAINT

A. General Information
1. Projects funded in whole or in part with federal funds must comply with the "Regulation on Lead-Based Paint Hazards in Federally Owned Housing and Housing Receiving Federal Assistance".
2. Properties built after 1/1/78 and properties needing emergency rehab assistance are exempt from Lead-Based Paint Regulation requirements.
3. All projects receiving over $25,000 of HUD funds per unit for rehabilitation, must abate all Lead-based paint hazards.

B. **Removal Procedures**
1. Risk Assessments:
   a. A Risk Assessment must be completed by a licensed Lad-Based Paint Risk Assessor on all properties built before 1/1/78 (excluding emergency rehab cases).
   b. The Owner or Project Manager arranges and pays for the Risk Assessment.
   c. The Risk Assessment report will summarize the nature and scope of known lead-based paint hazards.

C. Scope of Work: The Project Manager prepares the Scope of Work incorporating lead hazard reduction work based on the Risk Assessment report.

D. Licensed Lead Abatement Supervisor: Only General or Subcontractors who are State licensed Lead Abatement Supervisors are allowed to bid on projects involving lead hazard reduction work.

E. Project Plan: The General Contractor must prepare a written project plan and communicate it to the Owner and Project Manager. It shall include:
   1. Start-up date and how long the project is expected to last.
   2. Areas to be abated and precautions to take.
   3. A warning to pay attention to the caution signs that are posted by the General Contractor around the project site.
   4. Location of areas that may be restricted.

F. The selected General Contractor performs the work, using lead hazard control measures where indicated in the Scope of Work.

G. The General contractor will notify the Project Manager when work is complete.

H. A Clearance Test for lead-based paint dust is required upon completion of the Lead Based Paint Hazard Reduction Project Plan.
   1. The Clearance Test must be performed by a State licensed Clearance Examiner.
   2. It is the responsibility of the General Contractor to arrange and pay for any and all of the Clearance Tests that may be required. If the Clearance Test indicates lead levels lower than acceptable amounts, the General Contractor's lead reduction and control work is complete and the final construction payment application may be processed.
   3. If the Clearance Test is found to contain lead levels above an acceptable amount, the General Contractor must clean the work area again and request another Clearance Test at no additional cost to the Owner, until the Clearance Test is passed.
   4. The Final payment application will not be processed until all areas are determined to be free of hazardous lead levels.

I. Additional Information:
   1. General Contractor must obtain and review the following documents, which provide more detailed information on lead paint hazards and reduction and control measures:
      a. Minnesota Department of Lead program, "Safely Working with Lead While Remodeling the Older Home" pamphlet series. 1-651-215-0890.
         1) U.S. Environmental Protection Agency, "Renovate Right: Important Lead Hazard Information for Families, Child Care Providers, and Schools" 21 page booklet. <http://www.epa.gov/lead/pubs/rrpamph.pdf>
         2) U.S. Department of Housing and Urban Development, "Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work:". English and Spanish versions available. <http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/healthyhomes/lead>
         3) U.S. Department of Housing and Urban Development, "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing". October 1996. <http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/lbp/hudguidelines>
         4) U.S. Environmental Protection Agency, "Model Lead-Based Paint Abatement Worker Training Course." English and Spanish versions available. <http://www.epa.gov/lead/pubs/abateworker.htm>
         5) U.S. Environmental Protection Agency, "Lead Safety for Renovation, Repair, and Remodeling: Student Manual". <http://www.epa.gov/lead/pubs/rrp_8hr_studentmanual_feb09.pdf>

J. Abatement:

1. Component Replacement: The removal of building components that contain lead-based paint. It is most appropriate for items such as doors, windows, trim, and cabinets.
2. Paint Removal: The separation of paint from the substrate using safe heat, chemical, or abrasive methods. It may be done on- or off-site. Abrasive methods can create a great deal of dust, are the most hazardous, and require the greatest care and most thorough clean-up.
3. Enclosure: The installation of a barrier (such as gypsum board or paneling) that is mechanically attached to the building component, with all edges and seams sealed to prevent escape of lead-based paint dust. It is most appropriate for large surfaces, such as walls, ceilings, floors, and exteriors.
4. Encapsulation: The application of a liquid or adhesive material that covers the component and forms a barrier that makes the lead-based paint surface inaccessible by relying upon adhesion. It may be appropriate for many kinds of smooth surfaces but it cannot be used effectively on friction surfaces, surfaces in poor condition, or surfaces that may become wet. It also must be compatible with existing paint.
5. Soil Removal: The removal of at least the top six inches of topsoil is adequate for most projects. In areas with heavy contamination, up to two feet may have to be removed, and must be disposed of using proper waste management techniques that comply with local requirements. The maximum lead concentration in replacement soil shall not exceed 200 ug/g. Sod or seeding of new soil should occur.
6. Soil Cultivation: The mixing of low lead soil with high lead soil is an appropriate method if the average lead concentration of the soil to be abated is below 1,500 ug/g. Thorough mixing is required, and pilot testing of various techniques may be needed to ensure that thorough mixing does occur.
7. Paving: The covering of highly contaminated soil with high quality concrete or asphalt. Paving is common in high traffic areas but not appropriate in play areas. The need for uncontaminated replacement soil is eliminated as is waste disposal costs. Paving often turns out to be the most economical recourse, despite its aesthetic disadvantages.

6.04 WASTE MANAGEMENT, SEE SECTION 01 7419

PART 6 SUBMITTALS

7.01 GENERAL

A. Coordinate preparation and processing of submittals with performance of construction activities.

B. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

C. Provide the following submittals required for performance of the Work, including the following:
   1. Administrative Submittals.
   2. Construction Schedule
   3. Samples/Product Data.

7.02 ADMINISTRATIVE SUBMITTALS

A. Provide as required in the Contract Documents. Such submittals include, but are not limited to, the following:
   1. Sworn Construction Statement
   2. Required permits.
   3. Applications for Payment.
   4. Insurance certificates.
   5. List of subcontractors.

7.03 CONSTRUCTION SCHEDULE

A. A construction schedule must be submitted to the Owner and Project Manager with the bid, unless requested otherwise in writing. Construction shall be completed within 120 days of notice to proceed.

7.04 SAMPLES/PRODUCT DATA:

A. Submit Samples as specified to be physically identical with the material or product proposed.

B. Samples include partial sections of manufactures or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.

C. Provide product samples and/or product data for the following where included in the scope of work and for any other requirements mentioned in the specifications or drawings:
   1. Paint colors.
   2. Masonry and mortar color samples.
   3. Windows.
   4. Doors and hardware.
   5. Bathroom accessories.
   6. Kitchen cabinets.
   7. Plumbing fixtures.
   8. Lighting fixtures.
   9. Foundation waterproofing.
   10. Stair railings.
   11. Tile.
   12. Carpet.
   13. Interior trim samples.
   14. Exterior trim and siding samples.

END OF SECTION

SECTION 01 2000
PAYMENT PROCEDURES

PART 1 GENERAL

1.01 PAYMENT DOCUMENTS

A. All documents required to create a complete Payment Application can be downloaded from https://sites.google.com/site/nspconstructiondocs/

B. Payment Application form to be used: Application and Certificate for Payment provided by the HRA.
   1. Columns A, B, C should not change during the course of construction and should directly relate to the Sworn Construction Statement provided at the start of construction. As draws progress, columns D, E and F change to reflect work completed.

C. Additional Documents to be submitted with each pay application:
   1. Monthly Employment Utilization (MEU) Form
   2. Identification of Prime and Subcontractor Form
      a. An updated Sub ID sheet must be attached to help HR/EEO staff track subcontractor utilization.
   3. B2Gnow
      a. Ensure each subcontractor is logging into the B2Gnow system and logging payments received.

1.02 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement. The Owner will process the payment within 30 days.

B. Applications for payment must be signed by an authorized officer of the general construction firm

C. Use data from approved Sworn Construction Statement. Provide dollar value in each column for each line item for portion of work performed .

D. Submit one signed copy of the Application for Payment, complete with all required attachments, to the Construction Manager.

1.03 MODIFICATION PROCEDURES

A. For minor changes not involving an adjustment to the Contract Price or Contract Time, Construction Manager will issue instructions directly to Contractor.

B. Execution of Change Orders: Construction Manager will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

C. After execution of Change Order, promptly revise Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
   1. Change orders shall be listed as lump sumps on the bottom of the pay application and referred to on the cover sheet.
   2. Include each line item of the change order as a separate line item in the pay application and the amount of the contractor adjustments.

1.04 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Price, previous payments, and sum remaining due.

B. Additional documents:
   1. Final lien waivers from all subcontractors/material providers
   2. Monthly Employment Utilization (MEU) Form
   3. Project Employment Utilization (PEU) for City Funded Projects
   4. Lead Clearance
   5. NEC Certificate of Completion
   6. Waste Management Plan Report

7. Permit Sign-offs/Certificate of Code Compliance
8. Winter Work/Weather Related Work Escrow
9. Certificate of Substantial/Final Completion

C. See Section 01 7700 - Closeout Procedures and Submittals, for additional information.

END OF SECTION

SECTION 01 2300
ALTERNATES

PART 1 GENERAL

1.01 ACCEPTANCE OF ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

1.02 SCHEDULE OF ALTERNATES

Alternate #1 –install carpeting on second floor except bathroom in case wood flooring cannot be refinished- see 09 6800 Carpeting

Alternate #2-install laminate flooring in case wood flooring cannot be refinished on 1st floor- see laminate flooring- 09 6219

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

D. Substitution Submittal Procedure:
   1. Submit two copies of request for substitution for consideration. Limit each request to one proposed substitution.
   2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
   3. The Construction Manager will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

SECTION 01 6116

VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SUMMARY

A. Implement the following procedures in an effort to improve indoor air quality during Owner's occupancy.

B. Construction Indoor Air Quality (IAQ) Management
   1. Provide low-emitting products

1.02 DEFINITIONS

A. VOC-Restricted Products: All products of each of the following categories when installed or applied on-site in the building interior:
   1. Adhesives, sealants, and sealer coatings.
   2. Carpet.
   3. Carpet cushion.
   4. Resilient floor coverings.
   5. Wood flooring.
   6. Paints and coatings.
   7. Insulation.
   8. Gypsum board.
   9. Acoustical ceilings and panels.
   10. Cabinet work.
   11. Wall coverings.
   12. Composite wood and agrifiber products used either alone or as part of another product.
   13. Other products when specifically stated in the specifications.

B. Interior of Building: Anywhere inside the exterior weather barrier.

C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

PART 2 PRODUCTS

2.01 MATERIALS

A. All VOC-Restricted Products: Provide products having VOC content of types and volume not greater than those specified in State of California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions From Various Sources Using Small-Scale Environmental Chambers.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Current GREENGUARD Children & Schools certification; www.greenguard.org.
      b. Current Carpet and Rug Institute Green Label Plus certification; www.carpet-rug.org.
      c. Current SCS Floorscore certification; www.scscertified.com.
      d. Current SCS Indoor Advantage Gold certification; www.scscertified.com.
      e. Product listing in the CHPS Low-Emitting Materials Product List at www.chps.net/manual/lem_table.htm.
      f. Current certification by any other agencies acceptable to CHPS.
      g. Report of laboratory testing performed in accordance with CHPS requirements for getting a product listed in the Low-Emitting Materials Product List; report must include laboratory's statement that the product meets the specified criteria.

B. Adhesives and Joint Sealants: Provide only products having volatile organic compound (VOC) content not greater than required by South Coast Air Quality Management District Rule No.1168.
   1. Evidence of Compliance: Acceptable types of evidence are:

a. Report of laboratory testing performed in accordance with requirements.
b. Published product data showing compliance with requirements.
c. Certification by manufacturer that product complies with requirements.

C. Aerosol Adhesives: Provide only products having volatile organic compound (VOC) content not greater than required by GreenSeal GS-36.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current GreenSeal Certification.

D. Paints and Coatings applied within building waterproof envelope:
1. Comply with VOC Content limits (as noted in Criterion 6.1) of Green Seal Standard GS-11 "Paints," First Edition; Standard GC-03 "Anti Corrosive Paints," and MPI GPS-2-8, as follows (in grams/Liter):
a. Flat: 50
b. Non-flat: 50
c. Anti-Corrosive and Anti Rust: 250
d. Floor Coatings: 100

E. Carpet and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current Green Label Plus Certification.
b. Report of laboratory testing performed in accordance with requirements.

F. Carpet, Carpet Cushion, and Adhesive: Provide products having VOC content as specified in Section 09 6800.

G. Carpet Cushion: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current Green Label Plus Certification.
b. Report of laboratory testing performed in accordance with requirements.

H. Composite Wood and Agrifiber Products and Adhesives Used for Laminating Them: Provide products having no added urea-formaldehyde resins.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current SCS "No Added Urea Formaldehyde" certification; www.scscertified.com.
b. Published product data showing compliance with requirements.
c. Certification by manufacturer that product complies with requirements.

I. Other Product Categories: Comply with limitations specified elsewhere.

PART 3 EXECUTION

3.01 GENERAL

A. Incorporate procedures and processes during construction and prior to occupancy as described herein.

END OF SECTION

SECTION 01 7000
EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

D. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

PART 3 EXECUTION

3.01 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Construction Manager of any discrepancies discovered.

C. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

3.02 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.03 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.

6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-conforming work.

C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

D. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

3.04 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

3.05 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.06 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

3.07 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Review Section 01 7700 CLOSEOUT PROCEDURES AND SUBMITTALS.

C. Notify Construction Manager when work is considered ready for Substantial Completion.

D. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Construction Manager's review.

E. Notify Construction Manager when work is considered finally complete.

F. Complete items of work determined by Construction Manager's final inspection.

END OF SECTION

SECTION 01 7419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. HRA Policy for this project is dependent on diversion of 50 percent, by weight, of potential landfill trash/waste by recycling and/or salvage.

D. The following recycling incentive programs are mandatory for this project; Contractor is responsible for implementation:

1.02 SUBMITTALS

A. ACTION SUBMITALS

1. **CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT(CWM) PLAN**
   a. Analysis of estimated job-site waste to be generated, including types and quantities of compostable, recyclable, and salvageable materials.
   b. Description of means and methods to achieve 50 percent diversion requirement for compostable, recyclable, and salvageable materials, including those that may be donated to charitable organizations.
   c. Identification of the carpet product's composition as polymer, nylon or polypropylene
   d. Identification of recycling contractors and haulers proposed for use in the project and locations accepting construction waste materials or entities providing related services.

B. FINAL WASTE MANAGMENT REPORT: General Contractor is responsible to submit at completion of construction and prior to contract close-out, in electronic format.

1. All information required in Waste Management Progress Reports
2. Legible copies of on-site logs, manifests, weight tickets, and receipts.
3. Final calculations, including total amount (by weight or volume) of diverted construction and demolition waste, and the total amount (by weight or volume) of landfilled waste.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor and Construction Manager.

C. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.

D. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

E. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

F. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

G. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

2.02 UNACCEPTABLE METHODS OF WASTE DISPOSAL

A. Burning or incinerating on or off project site

B. Burying on project site, other than fill.

C. Dumping or burying on other property, public or private, other than official landfill.

D. Illegal dumping or burying.

END OF SECTION

SECTION 01 7700
CLOSEOUT PROCEDURES AND SUBMITTALS

PART 1 GENERAL

1.01 SUBMITTALS

A. All documents required to create a complete Final Payment Application can be downloaded from https://sites.google.com/site/nspconstructiondocs/

B. Notify Construction Manager when work is considered ready for Substantial Completion.
   1. Make sure the work is mostly complete and cleaned for inspection.

C. Substantial Completion Submittals:
   1. Project Record Documents: Submit documents listed below to Construction Manager:
      a. Final Pay Application
      b. Monthly Employment Utilization (MEU) Form
      c. Project Employment Utilization (PEU) for City Funded Projects
      d. Lead-based Paint Hazard Clearance Testing, see Section 02 8313 Lead Hazard Control Activities
      e. Radon Mitigation Verification Submittal/Close-Out Test
      f. Mold close out test
      g. Energy Modeling/NEC Compliance Report
      h. Final Waste Management Report, see Section 01 7419 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
      i. Permit Closeout/Code Compliance
      i. Winter Work/Weather Related Work Escrow
      k. Final Lien Waivers
      l. Material Allowance Reconciliation Change Order (if necessary).

D. Notify Construction Manager when work is considered finally completed. All Punch List items shall be completed and approved by Construction Manager and HRA Project Manager.

E. Final Completion Submittals:
   1. Project Record Documents: Submit documents listed below to Construction Manager:
      a. Building Maintenance Manual and Warranty documents for following:
         1) Appliance and building systems
            (a) HVAC equipment
            (b) Lighting equipment
            (c) Kitchen and Laundry Appliance Manuals
         2) Water-using equipment and controls installed:
            (a) Hot water heater
            (b) Toilets
            (c) Faucets
            (d) Shower head(s)
            (e) Dishwasher
            (f) Clothes washer
            (g) Clothes dryer
      b. Signed Certificate of Substantial Completion
      c. Punch List Items Completed

PART 3 EXECUTION

2.01 LEAD-BASED PAINT HAZARD CLEARANCE TESTING

A. Where lead-based paint hazard control or reduction work has been performed by the General Contractor, the General Contractor will contact a certified third party Clearance Technician from Ramsey County Department of Public Health or other certified testing agency for clearance testing.

2.02 ENERGY MODELING (NEC)

A. Contractor must work with the Neighborhood Energy Connection (NEC) who will:
   1. Create an energy model with the building plans and specifications to show the building's projected energy performance in the design stages
   2. Conduct a mid-construction pre drywall thermal enclosure inspection
   3. Verify the final performance of the building with performance testing

2.03 OPERATION AND MAINTENANCE MANUALS

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

B. Prepare data in the form of an instructional manual.

END OF SECTION

SECTION 01 8113
SUSTAINABLE DESIGN REQUIREMENTS

PART 1 GENERAL

1.01 ENERGY CONSERVATION

A. This property must go through Xcel Energy's Home Performance with Energy Star program.
   1. All insulation and HVAC work must be performed by Xcel Energy's approved contractor list.
   2. General Contractors that are on the Home Performance list may choose Subcontractors that are not on the list, but those General Contractors will be held responsible for all work completed.
   3. General Contractors will be responsible for submitting documentation required of the Home Performance with Energy Star program and will be responsible for achieving Energy Improvements outlined by Neighborhood Energy Connection.
   4. The "Specifications for Energy Improvement Upgrades" provided by the Neighborhood Energy Connection (See appendix) are a part of the Scope of Work for this property.
   5. Any discrepancies between the Scope of Work and NEC's specifications are to be clarified during the bid process.

B. Energy Efficient Lighting
   1. The Owner/Project Manager shall select specific locations of fixtures and switches in each area.
   2. All lighting fixtures will be purchased new, unless otherwise indicated.
   3. No plastic lighting fixtures are acceptable.
   4. No fluorescent tub light fixtures are acceptable in living spaces.
   5. Provide Energy Star certified CFL or LED light bulbs for all fixtures.
   6. All light fixtures are to have color corrected bulbs.
   7. Light bulbs that are viewable within fixtures will be a globe or candelabra style CFL.
   8. Provide and install lighting fixtures and switches.
   9. Review fixtures with Owner prior to installation.
   10. All electrical outlets and cover plates are to be replaced throughout the building.

C. Energy Efficient Appliances
   1. All appliances must be purchased new and be Energy Star certified or high efficiency models when Energy Star certification is not possible.
   2. High-efficiency appliances meet the following standards

1.02 QUALITY ASSURANCE

A. The Neighborhood Energy Connection (NEC), through its Peak Performance Homes custom consulting program, certifies independent consultants who provide developers with specific information about how to increase the energy efficiency of their buildings.

PART 2 PRODUCTS

2.01 LOW-EMITTING MATERIALS

A. Cabinet Materials: Low VOC
   1. Provide wood cabinets with self closing hinges and adjustable shelves from the Schrock Select (available at Menard's), Mid-Continent Cabinetry (available at All Inc), or MINNCOR (available at MINNCOR) design lines or approved equal.
   2. Cabinets are to have plywood sides and bases.
   3. Drawer boxes shall be plywood with dovetail joinery.
   4. Cabinets to be constructed with maple; full overlay doors and flat or 5 piece. Alternative styles may be approval by the HRA.

PART 3 EXECUTION

3.01 CONSTRUCTION WASTE MANAGEMENT

A. Comply with Construction Waste Management and Disposal Plan. Section 01 7419

3.02 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

A. Change all air filters regularly during construction with filters specified for the specific furnace.
   1. Replace all air filters immediately prior to Substantial Completion with the specified permanent filters.

END OF SECTION

SECTION 02 4100
DEMOLITION

PART 1 GENERAL $_____

1.01 SUBMITTALS

A. Lead Project Plan, see Section 02 8313

B. Lead Test Reports, see Section 02 8313

1.02 RELATED SECTIONS

A. 02 8200 - Asbestos Remediation

B. 02 8313 - Lead Hazard Control Activities

1.03 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.

PART 3 EXECUTION

2.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Protect hardwood floors for possible refinishing later.
   4. Provide, erect, and maintain temporary barriers and security devices.

B. If hazardous materials are discovered during removal operations, stop work and notify Construction Manager and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

C. Perform demolition in a manner that maximizes salvage and recycling of materials.
   1. Inform Project Manager of potential strategies to reuse construction material.
      a. Only move forward with reusing of construction materials with Project Manager's consent.

2.02 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

2.03 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.

B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

C. Remove existing work as indicated and as required to accomplish new work according to Specifications and Drawings.

D. Services (Including but not limited to Site, Building Interior, Building Exterior, HVAC, Plumbing, and Electrical): Remove existing systems and equipment as indicated.

E. Interior Demolition as needed to complete the work outlined in the drawings, to include but not limited to:
   1. Basement/Mechanical
      a. The heating system: furnace
      b. Radiators
      c. Thermostat

d. Water heater
e. All water and waste piping
f. Basement window(s) All.
g. Any laundry appliances
h. all walls and framing
i. all unused items: 1 fuel tank, 2 stoves, 2 refrigerators, 1 thermostat, 2 smoke detectors, 2 water heaters
j. walls from storage area

2. Kitchens (2)
   a. Any appliances
   b. Soffits
   c. Cabinets and counter tops
   d. Kitchen Windows (east wall)
   e. Flooring including subflooring
   f. Ceilings

3. Bathroom 1st Floor
   a. Flooring
      1) Including subflooring
   b. Medicine cabinets and bath accessories
   c. Shower
   d. Tub
   e. Toilet

5. Bathroom 2nd floor
   a. Flooring
      1) Including subflooring
   b. Medicine cabinets and bath accessories
   c. Shower
   d. Tub
   e. Toilet

6. Throughout
   a. Windows
   b. Unnecessary hooks, nails, brackets, etc from walls.
   c. All non-code compliant issues, including but not exclusively electrical and plumbing.
   d. Lighting Fixtures All.
   e. Switch plate and receptacle covers All.
   f. Carpeting
      1) Including padding
   g. All shelving
   h. Chimney
   i. All interior doors including closets
   j. all trim, casing, and quarter round molding.

7. 1st floor
   1. Remove gypsum/plaster on all walls and ceilings
   2. Remove all suspended ceilings
   3. Remove any wall framing as noted on plans
   4. Remove rear stairs to second floor

8. 2nd floor
   1. Remove gypsum/plaster on all walls and ceilings

2. Remove all suspended ceilings
3. Remove any wall framing as noted on plans

F. Exterior Demolition to Include:
   1. Exterior Building and Garage
      a. Siding on house
      b. Cable Wiring, TV antennas or cable dishes
      c. Garage
      d. Entry and storm doors
      e. Gutters and Downspouts
      f. Electrical service masts

   2. Site Demolition:
      a. Chain link fence
      b. Sidewalks All.
      c. Concrete Stairs :Rear & Front including overhang
      d. Driveway/Parking Pad -Entire driveway from street to garage.
      e. All over growth on fences
      f. chain link fence gate
      g. asphalt patch on north side of house
      h. two coax cables

G. Protect existing work to remain.

2.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

END OF SECTION

SECTION 02 8200
ASBESTOS REMEDIATION

PART 1 GENERAL $\$$_____

1.01 CONTRACTOR RESPONSIBILITIES

A. Provide all labor, equipment, material supervision and subcontracting for the removal and disposal of all Asbestos-Containing Material (ACM) as specified in the attached Asbestos Test.

B. When work areas include both friable and nonfriable types of ACM, Contractor's shall prepare work area using procedures for friable asbestos removal.

1.02 SUBMITTALS

A. Proof that the Contractor is qualified to perform Asbestos Remediation in the State of Minnesota.

B. Test Reports: Indicate Complete Remediation of Project.

PART 3 EXECUTION

2.01 LOCATIONS

A. Review the Asbestos report, included in this Manual, for locations.

B. Asbestos has been identified at the following locations:

1) 2nd floor kitchen floor-2nd layer

2) 2nd floor dining room flooring

3) stairwell on 2nd floor tile

4) heat vents throughout

5) paper on ductwork in basement

END OF SECTION

SECTION 02 8313
LEAD HAZARD CONTROL ACTIVITIES

PART 1 GENERAL $_____

1.01 GENERAL INFORMATION

A. Projects funded in whole or in part with federal funds must comply with the "Regulation on Lead-Based Paint Hazards in Federally Owned Housing and Housing Receiving Federal Assistance." As a component of **Title X, Sections 1012 and 1013**, rehabilitation projects receiving more than $25,000 of federal funds must abate all lead.

B. Properties built after 1/1/78 and properties needing emergency rehab assistance are exempt from Lead-Based Paint Regulations.

1.02 PRICE AND PAYMENT PROCEDURES

A. Provide a price for the appropriate methods of abatement required by this scope of work.

1.03 SUBMITTALS

A. Project Plan: The General Contractor must prepare a written project plan and communicate it to the Construction Manager, Project Manager, and MN Department of Health. It shall include:
   1. Start-up date and how long the project is expected to last.
   2. Areas to be abated and precautions to take.
   3. A warning to pay attention to the caution signs that are posted by the General Contractor around the project site.
   4. Location of areas that may be restricted.

B. Test Reports: Indicate Lead Based Paint Clearance.
   1. Submitted at final draw

1.04 QUALITY ASSURANCE

A. Licensed Lead Abatement Supervisor: Only General or Subcontractors who are State licensed to conduct lead hazard reduction work are allowed to bid on projects involving lead hazard reduction work. See Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700 for applicable safety precautions, disposal regulations, and other compliance regulations that apply to abatement activities.

B. Per MN Statute, Contractors must provide a 5 day notification to the Minnesota Department of Health prior to beginning lead abatement activities. During lead abatement, a MN Licensed Lead Abatement Supervisor must be on site and workers conducting lead abatement must be MN Licensed Lead Abatement Workers. See the MDH website for additional information:

   http://www.health.state.mn.us/divs/eh/lead/prof/notification.html

PART 3 EXECUTION

2.01 ABATEMENT

A. When the Risk Assessment process determines that a Project contains a lead-based paint hazard, the General Contractor shall comply with the abatement measures defined by HUD in 24 CFR Part 35 Subpart A through R 35.1325

   http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/enforcement/lshr

and by the EPA in 40 CFR 745.227(e).

http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-sec745-227.pdf

and lead hazard reduction methods defined in Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700

http://www.health.state.mn.us/divs/eh/lead/rule.html

1. Component Replacement: The removal of building components that contain lead-based paint. It is most appropriate for items such as doors, windows, trim, and cabinets.
2. Paint Removal: The separation of paint from the substrate using safe heat, chemical, or abrasive methods. It may be done on- or off-site. Abrasive methods can create a great deal of dust, are the most hazardous, and require the greatest care and most thorough clean-up.
3. Enclosure: The installation of a barrier (such as gypsum board or paneling) that is mechanically attached to the building component, with all edges and seams sealed to prevent escape of lead-based paint dust. It is most appropriate for large surfaces, such as walls, ceilings, floors, and exteriors.
4. Encapsulation: The application of a liquid or adhesive material that covers the component and forms a barrier that makes the lead-based paint surface inaccessible by relying upon adhesion. It may be appropriate for many kinds of smooth surfaces but it cannot be used effectively on friction surfaces, surfaces in poor condition, or surfaces that may become wet. It also must be compatible with existing paint.
5. Soil Removal: The removal of at least the top six inches of topsoil is adequate for most projects. In areas with heavy contamination, up to two feet may have to be removed, and must be disposed of using proper waste management techniques that comply with local requirements. The maximum lead concentration in replacement soil shall not exceed 200 ug/g. Sod or seeding of new soil should occur.
6. Soil Cultivation: The mixing of low lead soil with high lead soil is an appropriate method if the average lead concentration of the soil to be abated is below 1,500 ug/g. Thorough mixing is required, and pilot testing of various techniques may be needed to ensure that thorough mixing does occur.
7. Paving: The covering of highly contaminated soil with high quality concrete or asphalt. Paving is common in high traffic areas but not appropriate in play areas. The need for uncontaminated replacement soil is eliminated as is waste disposal costs. Paving often turns out to be the most economical recourse, despite its aesthetic disadvantages.

2.02 LEAD-BASED PAINT HAZARD CLEARANCE TESTING

A. Where lead-based paint hazard control or reduction work has been performed by the General Contractor, the General Contractor will contact a certified third party Clearance Technician for clearance testing..

B. The Clearance Technician will conduct a visual assessment of completed work, take dust samples, have dust samples analyzed, and prepare a Clearance Report.

C. If sample results fail, Minnesota rules 4761.2670 subpart 2 and subpart 3 must be repeated. If test results of samples fail to meet clearance standards, surfaces must be retreated or recleaned at no additional cost to the Owner until clearance standard is met.

D. When the Clearance Report indicates that clearance standards have been met, and all other requirements of this section have been met, the Construction Manager and Owner will approve the final pay application.

2.03 LOCATIONS

A. Review Lead Report, attached in this Manual. Locations identified in the lead report are defined below, with reference to expected finish in other areas of the specification. Contractor is responsible for ensuring treatments meet abatement requirements as defined in federal and state statute..

B. Encapsulate:

1) Stair stringer at front entrance to second floor

2) Stair treads leading to basement

C. Remove

1) Stairs to second floor

2) Chair rail in 1st floor kitchen

3) cabinets in basement

D. Remove and Replace

1) Walls for 1st floor bedroom closet

2) 1st floor kitchen ceiling

3) 1st floor bathroom walls

4) All finish trim and casing

5) All interior doors including closets

6) Kitchen and bathroom cabinets

SECTION 02 8500
RADON MITIGATION

PART 1 GENERAL $_____

1.01 QUALITY ASSURANCE

A. Contractors: Must be Certified to perform this work and listed by the Minnesota Department of Health.
   1. ://www.health.state.mn.us/divs/eh/indoorair/radon/mitigation.html

B. Verification Testing: Provide testing indicating that mitigation efforts have been successfully implemented.

1.02 SUBMITTALS

A. Radon Mitigation Verification Submittal: Provide test results, including test number, indicating the elimination of radon levels.

1.03 WARRANTY

A. Product should be warranted to reduce indoor radon concentrations to below 4 pCi/L for 5 years.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Active Mitigation System:
   1. Provide a sub-slab or sub membrane depressurization system with an in-line fan.
   2. Fan powered soil depressurization systems shall meet all of the following requirements:
      a. above the eave of the roof
      b. ten feet or more above ground level
      c. ten feet or more from any window, door, or other opening into conditioned spaces of the structure that is less than two feet below the exhaust point
      d. ten or more from any opening into an adjacent building.

2.02 MATERIALS

A. All mitigation system electrical components shall be U.L. listed or of equivalent specifications.

B. All plastic vent pipes in mitigation systems shall be made of Schedule 40 PVC, ABS or equivalent piping material.

C. Vent pipe fittings shall be of the same material as the vent pipes.

D. Sump pit covers shall be made of durable plastic or other rigid material and designed to permit air tight sealing to permit easy removal for sump pump servicing. The cover shall be sealed using silicone or other non-permanent type caulking materials or air tight gasket.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with suggested best practices created by the Minnesota Department of Health, Indoor Air Quality Unit..

B. When installing radon mitigation systems that use sump pits as the suction point for active soil depressurization it is required that submersible sump pumps be installed.

C. <u>All pipe routing shall be located within the structure.</u> If this is absolutely not possible, contact HRA Project manager. In cases where the contractor is unable to determine a run for piping, system shall be installed on the rear elevation, with approval from Project Manager.

D. All joints and connections in radon mitigation systems using plastic vent pipes shall be permanently sealed with adhesives as specified by the manufacturer of the pipe material used.

E. Attic and external piping runs in areas subject to sub-freezing conditions should be protected to avoid the risk of vent pipe freeze-up.

F. Vent pipes shall be fastened to the structure of the building with hangers strapping or other supports that will adequately secure the vent material. Existing plumbing pipes, ducts, or mechanical equipment shall not be used to support or secure a radon vent pipe.
   1. Horizontal Supports: shall be installed at least every 6 feet.
   2. Vertical Supports: shall be installed at least every 8 feet.

G. Radon mitigation fans shall be wired to its own electrical circuit and conform with all codes.

H. All active soil depressurization radon mitigation systems shall include a mechanism to monitor system performance and warn of system failure.

END OF SECTION

SECTION 03 0100
MAINTENANCE OF CONCRETE

PART 1 GENERAL $_____

1.01 SECTION INCLUDES

A. Cleaning of existing concrete surfaces.

B. Repair of exposed structural, shrinkage, and settlement cracks.

C. Resurfacing of concrete surfaces having spalled areas and other damage.

D. Repair of deteriorated concrete.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

A. Detergent: Non-ionic detergent.

2.02 CEMENTITIOUS PATCHING AND REPAIR MATERIALS

A. Cementitious Repair Mortar, Trowel Grade: One- or two-component, factory-mixed, polymer-modified cementitious mortar; in-place material capable of withstanding freeze/thaw conditions.

B. Cementitious Hydraulic Waterstop: Very fast setting, low slump, hand formable, and capable of stopping active water leaks; in-place material capable of withstanding freeze/thaw conditions.

PART 3 EXECUTION

3.01 CLEANING EXISTING CONCRETE

A. Clean concrete surfaces of dirt or other contamination using the gentlest method that is effective.
   1. Try the gentlest method first, then, if not clean enough, use a less gentle method taking care to watch for impending damage.
   2. Clean out cracks and voids using same methods.

B. The following are acceptable cleaning methods, in order from gentlest to less gentle:
   1. Water washing using low-pressure, maximum of 100 psi, and, if necessary, brushes with natural or synthetic bristles.
   2. Increasing the water washing pressure to maximum of 400 psi.
   3. Adding detergent to washing water; with final water rinse to remove residual detergent.
   4. Steam-generated low-pressure hot-water washing.

3.02 CONCRETE SURFACE REPAIR USING CEMENTITIOUS MATERIALS

A. Clean concrete surfaces, cracks, and joints of dirt, laitance, corrosion, and other contamination using method(s) specified above and allow to dry.

B. Apply coating of bonding agent to entire concrete surface to be repaired.

C. Apply repair mortar by steel trowel to a minimum thickness of 1/4 inch (6 mm) over entire surface, terminating at a vertical change in plane on all sides.

D. Trowel finish to match adjacent concrete surfaces.

3.03 LOCATIONS

A. Basement Floor

END OF SECTION

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL $_____

1.01 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

PART 2 PRODUCTS

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.

B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches (38 mm) of concrete surface.

2.02 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M Grade 40 (280).

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150, Type I - Normal Portland type.

2.04 CONCRETE MIX DESIGN

A. Normal Weight Concrete:
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 psi (20.7 MPa).

PART 3 EXECUTION

3.01 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

B. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

3.02 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

3.03 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

3.04 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Maximum Variation of Surface Flatness:
   1. Exposed Concrete Floors: 1/4 inch (6 mm) in 10 ft (3 m).

B. Correct the slab surface if tolerances are less than specified.

C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.05 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. "Wood float" as described in ACI 302.1R; Garage Foor/Apron.
   2. "Steel trowel" as described in ACI 301.1R; Basement Floor.

3.06 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

3.07 LOCATIONS

A. Garage Floor/Apron

B. Driveway

C. Footings in basement below existing columns and additional columns added

END OF SECTION

SECTION 04 0100
MAINTENANCE OF MASONRY

PART 1 GENERAL $\$$_____

1.01 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 3 EXECUTION

2.01 REBUILDING

A. Cut out damaged and deteriorated masonry with care in a manner to prevent damage to any adjacent remaining materials.

2.02 REPOINTING

A. Cut out loose or disintegrated mortar in joints to minimum 1/2 inch (6 mm) depth or until sound mortar is reached.

B. Pre-moisten joint and apply mortar. Pack tightly in maximum 1/4 inch (6 mm) layers. Form a smooth, compact concave joint to match existing.

2.03 CLEANING NEW MASONRY

A. Verify mortar is fully set and cured.

B. Clean surfaces and remove large particles with wood scrapers, brass or nylon wire brushes.

2.04 LOCATIONS

A. Interior and Exterior foundation walls

END OF SECTION

SECTION 04 2300
GLASS UNIT MASONRY

PART 1 GENERAL $_____

1.01 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 GLASS UNITS

A. Hollow Glass Units: Permanently seal hollow unit by heat fusing joint; with joint key to assist mortar bond.

2.02 MORTAR MIXING

A. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.

PART 3 EXECUTION

3.01 INSTALLATION

A. Erect glass units and accessories in accordance with manufacturer's instructions.

3.02 LOCATIONS

A. Basement windows; replace All.

B. 1st Floor Bathroom Window

C. 2nd Floor Bathroom Window

END OF SECTION

SECTION 06 1000
ROUGH CARPENTRY

PART 1 GENERAL $\$$_____

1.01 UNIT PRICES

A. Garage Kit material has been pre-purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specific vendor to arrange for tand take delivery. Provide a bid price for labor and additional materials to perform work to code.
   1. Vendor: Menards, 2005 W. University Ave. Saint Paul, MN 55104. (651)645-1295
   2. Pre-purchased materials: Framing and roof trusses, sheathing, service door and small window.
      a. See attached for invoice

1.02 SUBMITTALS

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
   2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
   3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

B. Lumber fabricated from old growth timber is not permitted.

C. Provide wood harvested within a 500 mile (805 km) radius of the project site; see Section 01 6000 for requirements for locally-sourced products.

D. Lumber salvaged from deconstruction or demolition of existing buildings or structures is permitted in lieu of sustainably harvested lumber provided it is clean, denailed, and free of paint and finish materials, and other contamination; identify source; see Section 01 6000 for requirements for reused products.

E. Lumber fabricated from recovered timber (abandoned in transit) is permitted in lieu of sustainably harvested lumber, unless otherwise noted, provided it meets the specified requirements for new lumber and is free of contamination; identify source.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Sizes: Nominal sizes as indicated on drawings, S4S.

B. Moisture Content: S-dry or MC19.

C. Stud Framing (2 by 2 through 2 by 6 (50 by 50 mm through 50 by 150 mm)):
   1. Grade: No. 2.

D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 (50 by 150 mm through 100 by 400 mm)):

E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.

2.03 ACCESSORIES

A. Fasteners and Anchors:

1. Metal and Finish: Hot-dipped galvanized steel per ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.

B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing per ASTM A653/A653M.

C. Building Paper: Water-resistant Kraft paper.

2.04 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 FRAMING INSTALLATION

A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.

B. Install structural members full length without splices unless otherwise specifically detailed.

C. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AFPA Wood Frame Construction Manual.

D. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches (38 mm) of bearing at each end.

3.03 INSTALLATION OF CONSTRUCTION PANELS

A. Underlayment: Secure to subflooring with nails and glue.

3.04 LOCATION

A. All framing indicated in the drawings for second floor

B. All framing indicated for the drawings on the 1st floor

D. Framing Front & Rear entry: Install new 3'X3' landing, steps, and appropriate supports, footings, railing and hand railings to meet code requirements.

E. Construction of new garage, see above for pre-purchased materials.

F. Structural Work In Basement (see report):

1) Front portion of basement: add south/north wall where framing members have been cut starting on south side of basement to halfway.
2) At existing furnace add new post with footing to support load.
3) Add new beam, post, and footing at the far end of the basement
4) At arch/door way between the front portion and rear portion of basement add new header beam

END OF SECTION

SECTION 06 2000
FINISH CARPENTRY

PART 1 GENERAL $_____

1.01 RELATED SECTIONS

A. See Section 09 9000 Painting and Coating, for trim finish and color.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI Architectural Woodwork Standards for Premium Grade.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Provide sustainably harvested wood, certified or labeled as specified in Section 01 6000.

C. Provide wood harvested within a 500 mile (805 km) radius of the project site.

2.03 LUMBER MATERIALS

A. Softwood Lumber: Select Pine species sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for transparent finish.
   1. Baseboard system: #2 1X6 with 3/16 Radius shoulder with finger jointed WM-65fj 11/16" x 1 3/8" base cap molding.
   2. Window Trim: Header, stop, stool, apron and casing using 1"X4", select grade pine or better.
      a. Ease all outside edges with 1/16" radius.

2.04 FABRICATION

A. Shop assemble work for delivery to site, permitting passage through building openings.

2.05 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. Finish work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards, Section 5 - Finishing for Grade specified and as follows:

PART 3 EXECUTION

3.01 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards requirements for grade indicated.

B. Set and secure materials and components in place, plumb and level.

C. Use finish nails of sufficient length to penetrate framing 1".

D. Mitre all lap joints, and break all lap joints over framing.

E. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim to conceal larger gaps.

3.02 LOCATIONS

A. Install new casing, quarter-round molding, and trim throughout

END OF SECTION

SECTION 07 2119
FOAMED-IN-PLACE INSULATION

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 MATERIALS

A. Foamed-In-Place Insulation: Medium-density, rigid or semi-rigid, closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
   1. Closed Cell Content: At least 90 percent.

2.02 ACCESSORIES

PART 3 EXECUTION

3.01 APPLICATION

A. Apply insulation in accordance with manufacturer's instructions.

3.02 LOCATION

A. Insulate and air seal to rim joist cavities to an r-value of R-10.

END OF SECTION

SECTION 07 2126
BLOWN INSULATION

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 MATERIALS

A. Loose Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pour and bulk for pneumatic placement.
   1. R-Value: Attic R-50

B. Dense Pack Insulation: Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pour and bulk for pneumatic placement.
   1. R-Value: 19 if possible
   2. Density: 3.5 Lbs. per Cubic Foot for the entire cavity

C. Ventilation Baffles: Formed plastic.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install insulation and ventilation baffle in accordance with ASTM C1015 and manufacturer's instructions.

B. Drill 2 inch (50 mm) diameter insulation access ports in fascia boards to permit equipment access.

C. Place insulation pneumatically to completely fill stud, joist, and rafter spaces .

D. Pour insulation to completely fill stud, joist, and rafter spaces to a density of 3.5 lbs per cubic foot per cavity.

E. Completely fill intended spaces. Leave no gaps or voids.

F. Carefully seal all drilled holes with wood or foam plugs and patch all holes to match surrounding materials if the surface is exposed.

G. In balloon framed houses insures that blown cellulose is blocked from entering floor cavities such as second floor flooring.

3.02 LOCATIONS

A. ATTIC: Total R-value: R-50 according to NEC requirements.
   1. Dense pack below attic floor and blow above floor to meet R-50 requirement.

B. WALLS: Where walls are unopened, externally dense pack insulation to R-19 if possible or 3.5 lbs.per cubic foot per cavity.

C. KNEE WALLS: all knee walls shall have a top and bottom plate or blockers installed using a rigid material. Air seal all joints, cracks and penetrations in finished material including interior surface to framing connections. Insulate to R-19 with encapsulated fiberglass. Insulate and weather strip knee wall doors.

D. Slants: Add an additional 2" of rigid insulation (extruded polystyrene or iscyanurate) with edges of insulation sealed with manufacturer approved tape.

E. Crawl Spac: Total R-Value: R-19 according to NEC requirements. Install poly on ground. . Insulate to R-19 with encapsulated fiberglass permanently and directly against floor boards above.

END OF SECTION

SECTION 07 2500
WEATHER BARRIERS

PART 1 GENERAL $_____

1.01 UNIT PRICES

A. Tyvek material has been pre-purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.
   1. Vendor: Lampert Siding
   2. Pre-purchased materials:
      a. Tyvek Housewrap

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

A. Weather Barrier Membrane: Spunbonded polyolefin, non-woven, non-perforated, wether barrier
   1. Manufacturer: DuPont Tyvek HomeWrap or like product to be approved by owner.

B. Seam Tape: DuPont Tyvek or like product

C. Flashing: DuPont Tyvek or like product

D. Fasteners: DuPont Tyvek or like product

E. Interior Vapor Retarder: 6 Mil heavy plastic (polyethylene) sheeting
   1. On inside face of masonry and concrete walls use vapor retarder sheet, self-adhesive type,.
      a. Install to cover ground in crawl space and 6" up foundation walls
      b. Overlap seams by 2' and secure with Tyvek tape.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install materials in accordance with manufacturer's instructions.

B. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

C. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturers recommendations.

D. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturers recommended fasteners, spaced 12-18 inches vertically on center along stud line, and 24 inches on center, maximum horizontally.

3.02 LOCATION

A. Exterior of the House, under siding.

END OF SECTION

SECTION 07 2700

AIR BARRIER SYSTEM (SEALING OF BYPASSES)

PART 1 GENERAL $_____

1.01 QUALITY ASSURANCE

A. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in Minnesota.

PART 2 PRODUCTS

2.01 ADHESIVES AND SEALANTS

A. VOC content not to exceed the following [g/L; less water and less exempt compounds]
   1. Multipurpose construction adhesives: 70 g/L

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide continuous air barriers.
   1. Install continuous interior air barrier around the building
   2. Install continuous external air barrier between all conditioned space and unconditioned space.

B. Compartmentalization of dwelling units:
   1. Walls
      a. Seal exterior wall corners with joint sealant [and/or foam]
      b. Seal vertical walls at all penetrations with joint sealant [and/or foam]
      c. Seal window frame with low expanding foam
      d. Seal bottom plates on exterior walls with a foam gasket [and/or caulk, foam]
   2. Floors
      a. Provide complete seal at joists supporting conditioned space with joint sealant [and/or foam]
   3. Ceilings
      a. Install continuous top and bottom plates, and sheathing to create a six-sided air barrier on all attic knee walls and seal with foam [and/or caulk].
      b. Install blocking at exposed edges of insulation at joists and rafters
      c. Truss framing: Install blocking at the top and bottom of each framing bay.
      d. Seal attic hatches with joint sealant [and/or foam].
      f. Install baffles between all rafters or trusses to direct the flow of air over and above the attic insulation.
   4. Bathtub and Shower Enclosures
      a. Use mold-resistant material [plywood, oriented strand board (OSB), sheathing boards, moisture resistant gypsum] behind bathtub or shower enclosures, and extend the mold-resistant material the full length and with of the wall(s) on which the bathtub or shower enclosure abuts. Seal at all joints.
      b. Install spray foam at framing behind bathtub or shower enclosure prior to setting tub or shower.

C. Continuity of External Air Barrier
   1. Roof
      a. Install 4-inch to 6 inch "peal and seal" self-adhering waterproofing strips over joints in roof decking before installing the roof underlayment and cover.
   2. Mechanical work
      a. Seal holes from penetrations from unconditioned spaces with joint sealant and provide flashing.
      b. Seal flue openings with flashing and fire-rated joint sealant
   3. Building Envelope

a. Air barrier must be continuous around building, including all components that act together as the exterior air barrier (sheet or liquid membrane with compatible tapes, caulks, flashing). Foam or caulk all exterior sheathing joints and intersections.
b. Install weatherstripping hard-fastened to the door or frame at entranceways.
c. Seal the roof curb at ductwork penetrations.
d. Install continuous air barrier at the intersection of the porch roof and conditioned space.
e. Air seal and insulate exterior sheathing on bottom of cantilevered floor.
f. Lap and Foam or caulk exterior rigid insulation over the seams of the exterior wall sheathing.

5. Use air sealing with polyurethane caulk for following areas:
   a. Slab openings
   b. Slab penetrations
   c. Control or expansion joints
   d. Sump cover
6. Pest Management Measures
   a. For openings in the building envelope less than 1/4 inch, including pipe and electrical penetrations:
      1) completely seal to avoid pest entry.
   b. Install rodent-and corrosion proof screens for openings greater than 1/4 inch.

3.02 LOCATION

A. Exterior and Interior Throughout, including attic.

SECTION 07 3113
ASPHALT SHINGLES

PART 1 GENERAL $_____

1.01 UNIT PRICES

A. Roofing material has been purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.
   1. Vendor: Lampert Roofing
   2. Pre-purchased materials: Material pruchased for House and Garage
      a. GAF Elk Timberline 30 year HD Shingles
      b. Timbertex
      c. Ice and Water Shield
      d. 15 pound felt

1.02 QUALITY ASSURANCE

A. Perform Work in accordance with the recommendations of NRCA Steep Roofing Manual.

PART 2 PRODUCTS

2.01 SHINGLES

A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462; Class A fire resistance.
   1. Self-sealing type.
   2. Manufacturer: GAF ELK, Timberline 30 Year HD shingles
   3. Style: Architectural Shingle.
   4. Color: Weathered Wood.

2.02 ACCESSORIES

A. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 12 gage, 0.105 inch (2.67 mm) shank diameter, 3/8 inch (9.5 mm) head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch (19 mm) into roof sheathing or decking.

PART 3 EXECUTION

3.01 INSTALLATION - SHINGLES

A. Install shingles in accordance with manufacturer's instructions.

B. Install proper attic ventilation to code and to NEC recommendations.

3.02 LOCATION

A. House

B. Garage

END OF SECTION

SECTION 07 4646
FIBER CEMENT SIDING

PART 1 GENERAL $_____

1.01 UNIT PRICE

A. Siding material has been purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.
   1. Vendor: Lampert Siding
   2. Pre-purchased materials:
      a. Pre-primed Hardie Plank Siding. **(House Only)**
      b. Cost of Hardie Siding for Garage not included in pre-purchase and should be included in the contractors bid.

PART 2 PRODUCTS

2.01 SIDING

A. Lap Siding: Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with machined edges, for nail attachment.
   1. Style: Standard lap style.
   2. Texture: Smooth.
   3. Length: 12 ft (3.7 m), nominal.
   4. Width (Height): 5-1/4 inches (133 mm).
   5. Thickness: 5/16 inch (8 mm), nominal.
   6. Finish: Factory applied primer. Finish painting to be applied by contractor.
   7. Color: As selected by Construction Manager from manufacturers full range of available colors.
   8. Warranty: 50 year limited; transferable.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions and recommendations.
   1. Read warranty and comply with all terms necessary to maintain warranty coverage.

B. Over Wood and Wood-Composite Sheathing: Fasten siding through sheathing into studs.

C. Do not install siding less than 6 inches (150 mm) from surface of ground nor closer than 1 inch (25 mm) to roofs, patios, porches, and other surfaces where water may collect.

3.02 LOCATION

A. House (Material Pre-purchased)

B. Garage

END OF SECTION

SECTION 07 6200

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL $_____

1.01 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Aluminum: ASTM B209 (ASTM B209M) ; 0.032 inch (0.8 mm) thick; anodized finish of color as selected.
   1. Clear Anodized Finish: AAMA 611 AA-M12C22A41 Class I clear anodic coating not less than 0.7 mils (0.018 mm) thick.

B. Pre-Finished Aluminum Soffit, Trim and Facia: ASTM B209 (ASTM B209M) plain finish shop pre-coated with modified silicone coating.
   1. Manufacturer: Alsco Perfect Trim Plus

PART 3 EXECUTION

3.01 INSTALLATION

A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.

B. Seal metal joints watertight.

3.02 LOCATION

A. House

   1. Color: see selection sheet

B. Garage

   1. Color: see selection sheet

END OF SECTION

SECTION 07 7123
MANUFACTURED GUTTERS AND DOWNSPOUTS

PART 1 GENERAL $\$$_____

1.01 DESIGN REQUIREMENTS

A. Conform to applicable code for size and method of rain water discharge.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pre-Finished Aluminum Sheet: ASTM B209 (ASTM B209M) ; 0.032 inch (0.8 mm) thick.
   1. Finish: Plain, shop pre-coated with modified silicone coating.
   2. Color: To match the exterior trim.

2.02 COMPONENTS

A. Gutters: K style profile, seamless one-piece aluminum gutter, and guard

B. Gutter Guard: seamless, one-piece aluminum gutter and guard

C. Downspouts: SMACNA Rectangular profile.
   1. Size: 3X5

D. Anchors and Supports: Profiled to suit gutters and downspouts.
   1. Gutter Supports: Brackets.
   2. Downspout Supports: Straps.

E. Fasteners: Galvanized steel , with soft neoprene washers.

2.03 ACCESSORIES

A. Splash Pads: Precast concrete type, size and profiles indicated; minimum 3000 psi (21 MPa) at 28 days, with minimum 5 percent air entrainment.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.

B. Where feasible, a minimum of 6' offset extension shall be installed at the ends of all downspouts to divert water away from foundation.

C. Downspouts shall divert the entire water load in the direction of the rain garden according to the Landscape Plan.

3.02 LOCATION

A. Downspouts shall divert the entire water load in the direction of the rain garden according to the Landscape Plan.

END OF SECTION

SECTION 08 1100
EXTERIOR INSULATED METAL DOORS AND FRAMES

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 EXTERIOR PREHUNG METAL DOOR

A. Front Doors:
   1. Product: Mastercraft, St. Thomas - ST-650

B. Rear/Side Doors:
   1. Product: Mastercraft, Half Lite w/ Blinds - LT-10

C. Garage Service Door:
   1. Product: Mastercraft, 6-Panel - E-1 (part of pre-purchased garage kit)

2.02 ALUMINUM STORM DOORS

A. Front Door
   1. Product: Larson, Oakley, or approved equivalent

B. Rear Doors
   1. Product: Larson, Oakley, or approved equivalent

2.03 ACCESSORIES

A. DOOR HARDWARE: Door hardware finish to be Aged Bronze
   1. Front Door Hardware: Schlage Avanti
   2. Interior Door Hardware: Schlage Avanti

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine doors and installed door frames before hanging doors.
   1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
   2. Reject doors with defects

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use a expanding foam to insulate between the door frame and the rough opening.

C. Set units plumb, level, and true-to-line, without warping or racking doors, and with specified clearances; anchor in place.

D. Align and fit doors in frames with uniform clearances set by manufacturer.

E. Seal edges of doors, edges of cutouts, and mortises after fitting and machining

3.03 SYSTEMS INTEGRATION

A. Coordinate with low-voltage security contractor to install contacts in door.

3.04 ADJUSTING

A. Adjust Doors for smooth operation.

B. Operation: Rehang or replace doors that do not swing or operate freely.

3.05 LOCATIONS

A. Front Entrance - Door and Storm

B. Rear Entrance - Door and Storm

C. Garage Service door (included in garage kit)

END OF SECTION

SECTION 08 1429
WOOD DOORS

$_____

PART 2 PRODUCTS

2.01 INTERIOR WOOD DOORS

A. Quality Level: Premium Grade , in accordance with AWI/AWMAC/WI Architectural Woodwork Standards.

B. Wood products that Emit Low or No Formaldehyde

C. Wood products that Emit Low or No VOC

D. Interior Doors: 1-3/4 inches (44 mm) thick unless otherwise indicated; solid lumber construction; mortised and tenoned joints.
   1. Wood: **Pine**
   2. Door Type: 6-panel, pre-hung (unless other wise indicated)

2.02 ACCESSORIES

A. Molding: Wood, of same species as door facing, mitered corners; prepared for countersink style tamper proof screws.

B. Adhesives and Sealants: VOC content not to exceed the following [g/L; less water and less exempt compounds]:
   1. Multipurpose Construction Adhesives: 70g/L

C. Privacy Lockset

D. Hinges to match the lockset

E. Door stop

PART 3 EXECUTION

3.01 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and AWI/AWMAC Quality Standards requirements.

B. Coordinate installation of doors with installation of frames and hardware.

3.02 TOLERANCES

A. Conform to specified quality standard for fit, clearance, and joinery tolerances.

3.03 LOCATIONS

A. All doors as indicated on plans

END OF SECTION

SECTION 08 3323
OVERHEAD GARAGE DOORS

PART 1 GENERAL $_____

1.01 QUALITY ASSURANCE

A. Products Requiring Electrical Connection: Listed and classified by testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 COILING DOORS

A. Exterior Coiling Doors: Aluminum slat curtain.
   1. Guides: Formed track; galvanized steel.
   2. Electric operation.
   3. Mounting: Within framed opening.
   4. Exterior lock and latch handle.

2.02 ELECTRIC OPERATION

A. Electric Operators: Chain Drive Garage Door Opener
   1. Motor Rating: 1/3 hp (250 W); continuous duty.
   2. Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter.
   3. Controller Enclosure: NEMA 250 Type 1.
   4. Opening Speed: 12 inches per second (300 mm/s).
   5. Brake: Adjustable friction clutch type, activated by motor controller.
   6. Manual override in case of power failure.

B. Control Station: Standard three button (OPEN-STOP-CLOSE) momentary control for each operator.
   1. 24 volt circuit.

C. Safety Edge: Located at bottom of curtain, full width, electro-mechanical sensitized type, wired to stop operator upon striking object, hollow neoprene covered.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

C. Complete wiring from disconnect to unit components.

3.02 LOCATION

A. Garage

END OF SECTION

SECTION 08 5313
VINYL WINDOWS

PART 1 GENERAL $_____

1.01 PERFORMANCE REQUIREMENTS

A. Performance Requirements: Energy Star Rated to meet Minnesota climate conditions. Climate Zone 6 for 2006 IECC, ASHRAE 90.1-2007 and ENERGY STAR.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Windows: Extruded, hollow, tubular, ultra-violet resistant polyvinyl chloride (PVC) with integral color; factory fabricated; with vision glass, related flashings, anchorage and attachment devices.
   1. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440 R15.
   2. Configuration: double hung and fixed double hung sash.
   3. Color: Color as selected.

B. Insect Screens: 14/18 mesh, steel strands.

C. Fasteners: Stainless steel.

2.02 ADHESIVES AND SEALANTS

A. VOC content not to exceed the following [g/L; less water and less exempt compounds]:
   1. Multipurpose Construction Adhesives: 70 g/L
   2. Structural Glazing Adhesives: 100 g/L

2.03 HARDWARE

A. Double Hung Sash: Metal and nylon spiral friction slide cylinder, each sash, each jamb.

B. Sash lock: Lever handle with cam lock.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install window units in accordance with manufacturers instructions.

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

D. Insulate any voids between the window frame and the rough opening with foam insulation.

3.02 ADJUSTING

A. Adjust hardware for smooth operation and secure weathertight closure.

3.03 APPLICATIONS

A. Water Management: Walls, Exterior Windows
   1. Provide weather-resistive barrier/housewrap
   2. Provide pathway for liquid water to exit exterior wall assembly
   3. Provide pan flashing, side flashing, and head flashing

3.04 LOCATION

A. REPLACEMENT WINDOWS
   1. DOUBLE HUNG:
      a. Throughout - replace all existing double hung windows. Ensure all windows meet egress standards in bedrooms install new windows if necessary. Ensure tempered is glass is used where required by code.
         1) except bathroom windows to be glass block, see Section 04 2300

END OF SECTION

SECTION 09 0120

REPAIR OF PLASTER AND GYPSUM BOARD SURFACES

PART 1 GENERAL $\$$_____

1.01 SUMMARY

A. This section covers surface repairs of plaster and gypsum board surfaces.

B. Finish surface type should be smooth unless otherwise indicated.

PART 2 PRODUCTS

2.01 ACCESSORIES

A. Galvanized metal lath

B. Joint Compound

C. Plaster

D. Plastic Tarps

PART 3 EXECUTION

3.01 REPAIR

A. Walls and Ceilings: Repair interior surface(s) so that finish surface is smooth, even and properly prepared for finish application.
   1. Protect adjacent finished surfaces by covering with plastic or tarps.
   2. Install galvanized metal lath (weight per city code) over area of back up as required. May also secure with screws and inserted piece of gypsum board in areas to be patched.
   3. Before applying scratch coats, dampen areas to reduce absorption from joint compound/plaster.
   4. Apply finish coat and bring to thickness flush with surrounding surface.
   5. The interior temperature must be no less than a minimum 60 degrees during this work.

3.02 LOCATION

A. Throughout 1st floor ; as needed following improvements.

END OF SECTION

SECTION 09 0160
HARDWOOD FLOORING RESTORATION

PART 1 GENERAL $\$$_____

1.01 RELATED SECTIONS

A. See Section 099000 Painting and Coating.

B. See Section 01 6116 Volatile Organic Compound Content Restrictions

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 RESTORATION

A. Restore hardwood floors: Counter sink all nails and fill holes. Remove the quarter round molding and protect the wall molding with painters tape. Drum sand and edge floor finishing with 120 grit sandpaper to completely remove the existing finish. Vacuum and wipe floor with slightly water dampened rag, until no dust is present.

B. Apply a coat of Minwax Low-VOC Water Based Polyurethane base coat followed by 3 coats of Minwax Low-VOC Water Based polyurethane for floors.
   1. Product may not exceed 250 grams of VOC per Liter

C. Install new quarter round molding

D. Flooring Patching and Filling

   1. Patch in areas of missing or rotted materials. Wood to be same species as existing floor. Patches should be weaved into floor in staggered fashion to blend with original floor as much as possible.
   2. Filling- all minor gaps should filled with wood filler that matches the existing floor. Using Bona Pacific or other approved Green guard certified filler

3.02 LOCATIONS

A. First Floor:
   1. Throughout except bathroom and kitchen

B. 2nd Floor
   1. Throughout except bathroom

END OF SECTION

SECTION 09 2116
GYPSUM BOARD INSTALLATION

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Thickness:
      a. Vertical Surfaces: 1/2 inch (13 mm).
      b. Ceilings: 1/2 inch (13 mm).

B. Backing Board For Wet Areas: One of the following products:
   1. Application: Surfaces behind tile in wet areas including tub and shower surrounds and shower ceilings.

2.03 ACCESSORIES

A. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
   1. Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners , except as otherwise indicated.
   2. Ready-mixed vinyl-based joint compound.
   3. Powder-type vinyl-based joint compound.
   4. Chemical hardening type compound.

PART 3 EXECUTION

3.01 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

3.02 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.

3.03 LOCATIONS

A. As required by suggested demolition, including but not limited to:
   First Floor
   1. 1st floor all walls and ceilings that will remain according to plan
   2. All new walls according to plans
   2nd Floor
   1. 2nd floor all walls and ceilings that will remain according to plan
   2. All new walls according to plans

SECTION 09 3000

TILING

PART 1 GENERAL $_____

1.01 ALLOWANCES

1.02 FIELD CONDITIONS

A. Do not install adhesives in an unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

A. Glazed Wall Tile Type Ceramic: ANSI A137.1 , and as follows:

1. Colors: To be selected by Construction Manager from manufacturer's standard range. (see selection sheet)

2.02 TRIM AND ACCESSORIES

A. Ceramic Accessories: Glazed finish, same color and finish as adjacent field tile; same manufacturer as tile.

B. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.

C. Thresholds: Marble, white or gray, honed finish; 2 inches (50 mm) wide by full width of wall or frame opening; 1/2 inch (12 mm) thick; beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.

2.03 SETTING MATERIALS

2.04 GROUTS

A. Standard Grout: Any type specified in ANSI A118.6 or A118.7.

2.05 THICK-BED MATERIALS

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and The Tile Council of North America Handbook recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

3.02 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over wood substrates, install in accordance with The Tile Council of North America Handbook Method F142, with standard grout , unless otherwise indicated.

1. Where epoxy bond coat and grout are indicated, install in accordance with The Tile Council of North America Handbook Method F143.

B. Over wood substrate with backer board underlayment, install in accordance with The Tile Council of North America Handbook Method F144, for cementitious backer boards, with standard grout.

3.03 INSTALLATION - FLOORS - MORTAR BED METHODS

A. Over wood substrates, install in accordance with The Tile Council of North America Handbook method F141, with standard grout , unless otherwise indicated.

3.04 INSTALLATION - SHOWERS AND BATHTUB WALLS

A. At tiled shower receptors install in accordance with The Tile Council of North America Handbook Method B415, mortar bed floor, and W244, thin-set over cementitious backer unit walls.

B. At bathtub walls install in accordance with The Tile Council of North America Handbook Method B412, over cementitious backer units with waterproofing membrane.

C. Grout with standard grout as specified above.

3.05 INSTALLATION - WALL TILE

A. On exterior walls install in accordance with The Tile Council of North America Handbook Method W202, thin-set over concrete and masonry with latex-Portland cement grout.

B. Over cementitious backer units on studs, install in accordance with The Tile Council of North America Handbook Method W244 , using membrane at toilet rooms.

3.06 LOCATIONS

A. 1st floor Bathroom
   1. tub/shower surround
   2. floor
   3. laundry room

B. 2nd floor bathroom
   1. tub/shower surround
   2. floor

C. Kitchen
   1. floor including rear entry

SECTION 09 6800
CARPETING

PART 1 GENERAL $_____

1.01 ALLOWANCES

A. See selection sheet

1.02 FIELD CONDITIONS

A. Maintain minimum 70 degrees F (21 degrees C) ambient temperature 24 hours prior to, during and 24 hours after installation.

B. Ventilate installation area during installation and for 72 hours after installation.

PART 2 PRODUCTS

2.01 CARPET

A. Carpet Type Shaw Anso Yarn Texture Serenity Garden: Tufted, nylon, conforming to the following criteria:
   1. FHA Approved
   2. VOC Content: Provide CRI Green Label Plus certified product ; in lieu of labeling, independent test report showing compliance is acceptable.

2.02 CUSHION

A. Cushion: Cellular rubber:
   1. VOC Content: Provide CRI Green Label Plus certified product ; in lieu of labeling, independent test report showing compliance is acceptable.

2.03 ACCESSORIES

A. Tackless Strip: Carpet gripper, of type recommended by carpet manufacturer to suit application, with attachment devices.

B. Adhesives - General: Compatible with materials being adhered; maximum VOC content of 50 g/L; CRI Green Label certified ; in lieu of labeled product, independent test report showing compliance is acceptable.

C. Seam Adhesive: Recommended by manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Lay out carpet and locate seams in accordance with shop drawings:
   1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
   2. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.

3.02 STRETCHED-IN CARPET

A. Install tackless strips with pins facing the wall around entire perimeter, except across door openings. Use edge strip where carpet terminates at other floor coverings.

B. Double cut carpet seams , with accurate pattern match. Make cuts straight, true, and unfrayed. Apply seam adhesive to all cut edges immediately.

C. Join seams by hand sewing. Form seams straight, not overlapped or peaked, and free of gaps.

D. Following seaming, hook carpet onto tackless strip at one edge, power stretch, and hook firmly at other edges. Follow manufacturer's recommendations for method and amount of stretch.

E. The carpet should be stretched to eliminate puckers, scallops and ripples.

3.03 LOCATION

A. 2nd Floor
   1. All Bedrooms including closets

2. Hallway and Stairways to second floor

END OF SECTION

SECTION 09 6219

LAMINATE FLOORING

PART 1 - GENERAL

$_____

1.02 SYSTEM DESCRIPTION

A. Design Requirements: Provide concealed fastening wherever possible.
   1. Attachment considerations shall take into account site peculiarities and expansion and contraction movements so there is not possibility of loosening, weakening, buckling, or fracturing connection between wood flooring and substrate.

1.03 QUALITY ASSURANCE

A. Single Source Responsibility: Furnish laminate flooring from one manufacturer for Residential Units unless otherwise acceptable to Project Manager.

B. Composite-wood Products: Contain no urea formaldehyde.

C. Installer Qualifications: Acceptable to manufacturer with experience on at least five projects of similar nature in past five years.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect materials from damage, moisture, soiling and deterioration during transit and storage.

B. Do not deliver flooring materials until Project site conditions and operations which could damage, soil or deteriorate work are complete.

C. Store products and materials in ventilated, interior locations under constant minimum temperature and relative humidity recommended by manufacturer.

1.05 FIELD CONDITIONS

A. Environmental Requirements: Obtain and maintain temperature and moisture conditions as recommended by laminate flooring manufacturer during installation and remainder of construction period.

PART 2 - PRODUCTS

2.01 LAMINATE FLOORING – RESIDENTIAL UNITS

A. Description: Laminate flooring (Direct Pressure Laminate) consisting of four layered construction, Four layered thermal fused process includes smooth, abrasion resistant wear surface composed of cellulose paper saturated with melamine resin embedded with aluminum oxide to provide stain and scratch resistance, VTX print saturated with melamine resin to provide fade resistance, high density fiberboard core with technology to add moisture resistance, and melamine saturated balanced backing paper for added dimensional stability.

B. Basis of Design: Tarkett series to be selected by Project Manager. Selected from currently available Collection in 4.92 inches width x 47.24 inches length having nominal total gauge of 0.47 inch.

C. Other Acceptable Manufacturers:
   1. Pergo Laminate Floors, Mediterranean Kempas.

2.02 ACCESSORIES

A. Transition Pieces: Provide coordinating transitions and moulding pieces designated for L8706 to meet installation application for finishing and transitioning to other flooring products.

B. Primer and Adhesive: Manufacturer's recommended for conditions.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine conditions and proceed with work in accordance with Section 01 40 00.

1. Verify that substrates comply with manufacturer's requirements.
2. Ensure concrete has cured 28 days minimum.
3. Verify concrete curing compounds are compatible with flooring adhesive.
4. Verify that substrate is clean, dry, free of voids and cracks.

3.02 PREPARATION

A. Concrete Substrate Moisture Testing: Perform tests recommended by manufacturer and as follows. Proceed with installation only after substrates pass testing.
   1. Perform anhydrous calcium chloride test, ASTM F1869. Ensure concrete is within floor manufacturer's recommended limits prior to installation.
   2. For substrates with moisture vapor permeance in excess of 3 pounds water vapor per 1000 SF per 24 hour period, use floor coating manufacturer's suggested remedy. Do not proceed with flooring application until condition is corrected.

B. Preparation:
   1. Remove ridges, bumps, trowel marks and protrusions from substrate.
   2. Clean substrate to remove paint, dirt, oil, grease, sealers, release agents, hardening compounds, curing compounds, residual adhesives, and harmful substances which could impair performance of adhesive materials used with flooring products.
   3. Fill depressions, low spots, cracks, joints, holes, indentations, and other defects with leveling and patching compounds. Trowel to smooth, flat surface producing substrate to within tolerance of 1/4 inch in 10 feet.
   4. Vacuum clean substrate.
   5. Prime substrate in accordance with manufacturer's requirements.

3.03 LAMINATE FLOORING INSTALLATION

A. Install flooring and adhesive in accordance with manufacturer's recommendations.
   1. Install laminate flooring plumb, level, square, and free from warp or twist while maintaining dimensional tolerances and alignment with surrounding construction.
   2. Roll flooring immediately after installation with minimum 100 pounds roller.
   3. Install flooring wall to wall before installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings.
   4. Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets leaving required expansion of 1/4 inch to 1/2 inch.
   5. Install flooring with adhesives, tools, and procedures in accordance with manufacturer's recommendations. Observe recommended adhesive trowel notching, open times, and working times.

B. Transition Pieces: Install coordinated transitions and molding pieces in accordance with manufacturer's recommendations.

3.04 CLEANING AND PROTECTION

A. Cleaning: Clean as recommended by manufacturer. Do not use materials or methods which may damage finish and surrounding construction.
   1. Remove excess adhesive from floor surface as work progresses.

3.05 LOCATIONS

A. All of first floor except for kitchen, bathroom

SECTION 09 9000
PAINTING AND COATING

PART 1 GENERAL $_____

1.01 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.02 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Paints and Coatings: Sherwin Williams Low VOC or an any manufacturer listed in MPI Approved Products List (at www.paintinfo.com) approved by Project Manger.
   1. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
   2. Provide all paint and coating products from the same manufacturer to the greatest extent possible.

B. Stains: Minwax Low VOC or any other manufacturer approved by Project Manager

2.02 MATERIALS - GENERAL

A. Volatile Organic Compound (VOC) Content:
   1. Provide coatings that comply with the most stringent requirements specified in the following:
      a. Flat: 50 grams/Liter
      b. Non-Flat: 50 grams/Liter
      c. Floor Coating: 100 grams/Liter
      d. Anti-Corrosive: 250 grams/Liter

2.03 PAINT SYSTEMS

A. Provide Premium Grade systems (2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.

B. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.

C. Where sheen is not specified or more than one sheen is specified, sheen will be selected later by Construction Manager from the manufacturer's full line.

D. Provide colors as directed by Construction Manager.

E. Provide smooth texture throughout.

2.04 EXTERIOR PAINT SYSTEMS

A. Wood Traffic Surfaces:
   1. Applications include but are not limited to Decks.
   2. EXT 6.5D Deck Stain: Wood Preservative MPI #37, Deck Stain MPI #33.

2.05 INTERIOR PAINT SYSTEMS

A. Dressed Lumber:
   1. Applications include but are not limited to doors, door frames, window frames, window casings, trim, baseboards, and moldings.

B. Plaster and Gypsum Board:

PART 3 EXECUTION

3.01 SCOPE -- SURFACES TO BE FINISHED

A. Paint all exposed surfaces except where indicated not to be painted or to remain natural; the term "exposed" includes areas visible through permanent and built-in fixtures when they are in place.

B. Paint the surfaces described in PART 2 and as follows:
   1. If a surface, material, or item is not specifically mentioned, paint in the same manner as similar surfaces, materials, or items, regardless of whether colors are indicated or not.
   2. Paint surfaces behind movable equipment and furnishings the same as similar exposed surfaces.
   3. Paint surfaces to be concealed behind permanently installed fixtures, equipment, and furnishings, using primer only, prior to installation of the permanent item.
   4. Paint back sides of access panels and removable and hinged covers to match exposed surfaces.

C. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically noted; factory-primed items are not considered factory-finished.
   2. Items indicated to receive other finish.
   3. Items indicated to remain naturally finished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.

3.02 APPLICATION

A. Apply products in accordance with manufacturer's instructions and as specified or recommended by MPI Manual, using the preparation, products, sheens, textures, and colors as indicated.

B. Do not apply finishes over dirt, rust, scale, grease, moisture, scuffed surfaces, or other conditions detrimental to formation of a durable coating film; do not apply finishes to surfaces that are not dry.

C. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.

E. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, or other surface imperfections.

3.03 LOCATIONS

A. Throughout
   1. Walls and Ceilings: Flat Sherwin Williams Low VOC
      a. Wall Color: see selection sheet
      b. Ceiling Color: see selection sheet
      c. Doors
   2. Interior Trim: Semi-gloss Sherwin Williams Low VOC
      a. Trim Color: see selection sheet

B. Kitchen and Bath
   1. Walls and Ceilings: Eggshell Sherwin Williams Low VOC
      a. Wall Color: see selection sheet
      b. Ceiling Color:see selection sheet

C. Basement:
   1. Stairway to include treads, risers, and landings.
   2. Color: Match concrete floor grey

D. Exterior:
   1. Front/Rear Stairs - Stain
      a. Color: see selection sheet

   2. House Siding
      a. Color: see selection sheet

   3. Garage Siding
      a. Color: see selection sheet

END OF SECTION

SECTION 09 9723
CONCRETE AND MASONRY COATINGS

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 MATERIALS

A. Coatings - General: Provide complete systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated.

PART 3 EXECUTION

3.01 PRIMING

A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.02 COATING APPLICATION

A. Apply coatings in accordance with manufacturer's instructions, to thicknesses specified.

B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

3.03 LOCATIONS

A. Basement Foundation Walls - DryLock by ULG, or like product.

B. Basement Floor - concrete floor grey

END OF SECTION

SECTION 10 5623
CLOSET STORAGE SHELVING

PART 1 GENERAL $_____

1.01 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, with installation instructions.

PART 2 PRODUCTS

2.01 SHELVING APPLICATIONS

A. Shelf Depth: 12 inches (305 mm), unless otherwise indicated.

B. Other Bedroom Closets:
   1. Wall-to-wall shelf with free sliding hanger rod.
   2. Not less than 4 feet (1.25 m) of shoe shelf.

C. Coat Closets:
   1. Wall-to-wall shelf with integral hanger rod.

D. Linen Closets:
   1. Wall-to-wall shelves spaced at 13 inch (330 mm) vertically, not less than 16 inch (408 mm) deep.

E. Storage Closets:
   1. Wall-to-wall storage shelves, stacked at 13 inch (330 mm) vertically, not less than 12 inch (305 mm) deep.

2.02 MATERIALS

A. Wire Shelving: Factory-assembled coated wire mesh shelf assemblies for wall-mounting, with all components and connections required to produce a rigid structure that is free of buckling and warping.
   1. Construction: Cold-drawn steel wire with average tensile strength of 100,000 psi (690 MPa) resistance welded into uniform mesh units, square, rigid, flat, and free of dents or other distortions, with wires trimmed smooth.
   2. Coating: PVC or epoxy, applied after fabrication, covering all surfaces.
   3. PVC Coating: 9 to 11 mils (0.23 to 0.028 mm) thick.
   4. Epoxy Coating: Non-toxic epoxy-polyester powder coating baked-on finish, 3 to 5 mils (0.76 to 1.27 mm) thick.
   5. Standard Mesh Shelves: Cross deck wires spaced at 1 inch (25.4 mm).
   6. Close-Mesh Shelves: Cross deck wires spaced at 1/2 inch (12.7 mm).
   7. Shelf and Rod Units: Integral hanging rod at front edge of shelf.
   8. Free-Sliding Hanging Rod: Integral hanging rod that permits uninterrupted sliding of hangers the full width of the shelf.
   9. Shoe Shelves: Same wire spacing as standard mesh shelves; angled wall brackets; upturned front lip.

B. Fasteners: As recommended by manufacturer for mounting substrates.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions, with shelf surfaces level.

B. Install back clips, end clips at side walls, and support braces at open ends. Install intermediate support braces as recommended by manufacturer.

3.02 LOCATIONS

A. Closets Throughout

END OF SECTION

SECTION 11 3100
HRA RESIDENTIAL APPLIANCES

PART 1 GENERAL $_____

1.01 SUMMARY

A. All appliances must be purchased new and Energy Star certified or high efficiency models when Energy Star certification is not possible.

B. All appliances must meet the Sustainable Design Requirements covered in Section 018113

1.02 PRICE AND PAYMENT PROCEDURES

A. Appliances have been pre-purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.
   1. Vendor: All, Inc. Appliances
   2. Product:
      a. Refrigerator: FFHT2126LS/K Energy Star Rated 21 cu ft top mounted refrigerator, stainless steel, with icemaker
      b. Range: FFGF3053LS Frigidaire 30" Free-standing Gas Range, Self Clean, Clock
      c. Microwave/Hood: FFMV162LS Over the Range Micro/Hood, to be vented to exterior
      d. Dishwasher: FGHD2433KF Energy Star 24" Built-in Dishwasher, including dishwasher cord.
      e. Washer: FAFW3801LW Energy Star Residential Front Load Washer
      f. Dryer: FAQG7001LW Residential Gas Dryer

1.03 SUBMITTALS

A. Product Data: Manufacturer's data indicating dimensions, capacity, and operating features of each piece of residential equipment specified.

1.04 QUALITY ASSURANCE

A. Electric Appliances: Listed and labeled by UL and complying with NEMA standards.

B. Gas Appliances: Bearing design certification seal of AGA.

PART 3 EXECUTION

2.01 INSTALLATION

A. All appliances shall be uncrated, cleaned and readied for use.

B. Dryer and Rangehood should be vented to exterior.

C. Installation shall include all cord attachments, wiring, pluming as gas hook ups necessary for appliance operation.

D. Install in accordance with manufacturer's instructions.

E. Anchor built-in equipment in place.

2.02 LOCATIONS

A. Kitchen

B. Basement

END OF SECTION

SECTION 12 1110
HRA MAIL BOX AND HOUSE NUMBERS

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Mailbox:
   1. Black enamel finish, letter-sized mail box with magazine rack and lock-eye for padlock.

B. House Numbers:
   1. 3" high metal or PVC house numbers on a 1"x4" pine backer board painted with 2 coats of exterior white latex paint

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATION

A. House Number and Mailbox at Front Entrance

B. One House Number at Garage Overhead Entrance

SECTION 12 1111
BATHROOM FURNISHINGS

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 TOWEL SETS

A. Install a metal bath set comprised of a hand towel ring, 24" towel bar and toilet paper holder

B. Manufacturer: Saga Series Toilet Accessories
   1. Hand Towel Ring: Model # DN6886xx
   2. Towel Bar: Model # DN6818xx
   3. Toilet Paper Holder: Model # DN6808xx

C. Brushed nickel or bronze finish to match faucet (see selection sheet)

2.02 MEDICINE CABINET

A. Install a medicine cabinet with hinged plate glass mirror and two shelves over the sink.

B. Manufacturer: see selection sheet

C. Brushed nickel or bronze finish to match faucet

2.03 SHOWER CURTAIN ROD

A. Install a show curtain rod using wall anchors.

B. Manufacturer: Moen, Adjustable Shower Rod. Model # DN2160xx

C. Brushed nickel or bronze finish to match faucet (see selection sheet)

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATIONS

A. 1st floor bathroom

B. 2nd floor bathroom

END OF SECTION

SECTION 12 3530
RESIDENTIAL CASEWORK

PART 1 GENERAL $_____

1.01 PRICE AND PAYMENT PROCEDURES

A. Allowances: see selection sheet

B. Kitchen and Bathroom Cabinet and Counter Top-see selection sheet

C. Allowance covers material and not labor

1.02 SUBMITTALS

A. Shop Drawings: Indicate casework locations, large scale plans, elevations, clearances required, rough-in and anchor placement dimensions and tolerances.

1.03 QUALITY ASSURANCE

A. Products: Complying with KCMA A161.1 and KCMA Certified.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. The HRA has approved Shrock Select, Medallion or Mid-Continent

2.02 COMPONENTS

A. Kitchen Cabinets: See Kitchen Design

B. Bathroom Vanity Cabinets: Single 30 inch Vanity Cabinet shall match Kitchen Cabinet finish.

C. Cabinet Construction: Plywood sides and bases.

D. Kitchen Countertop: Post formed plastic laminate over particle board, coved to back splash.
   1. Side Splash: Plastic laminate over particle board, square internal intersections to back splash and top surface , contoured to suit counter top profile.
   2. Manufacturer: WilsonArt, Desert Springs: 4904

E. Vanity Countertop: Post formed plastic laminate over particle board, coved to back splash.
   1. Side Splash: Plastic laminate over particle board, square internal intersections to back splash and top surface , contoured to suit counter top profile.

F. Door and Drawer Fronts: Solid wood.

G. Drawer Box Construction: Plywood with dovetail joinery

2.03 HARDWARE

A. Hardware: Manufacturer's standard.

2.04 FABRICATION

A. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.

B. Fabricate corners and joints without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.

2.05 FINISHES

A. Exposed To View Surfaces: Stain, seal, and varnish of color as selected.

PART 3 EXECUTION

3.01 LOCATIONS

A. Kitchen Cabinets & Counter Top: Kitchen

B. Bathroom Cabinet & Counter Top: 1st floor bath,2nd floor bathroom

3.02 INSTALLATION

A. Install casework, components and accessories in accordance with manufacturer's instructions.

B. Set casework items plumb and square, securely anchored to building structure.

3.03 LOCATIONS

A. Kitchen

B. 1st floor bathroom

C. 2nd floor bathroom

END OF SECTION

SECTION 22 3000
PLUMBING EQUIPMENT

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data:
   1. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
   2. Indicate pump type, capacity, power requirements.
   3. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
   4. Provide electrical characteristics and connection requirements.

B. Shop Drawings:
   1. Indicate heat exchanger dimensions, size of tappings, and performance data.
   2. Indicate dimensions of tanks, tank lining methods, anchors, attachments, lifting points, tappings, and drains.

PART 2 PRODUCTS

2.01 RESIDENTIAL GAS FIRED WATER HEATERS

A. Type: Automatic, natural gas-fired, vertical storage.

B. Performance:
   1. Energy Factor: EF .67 power vented.

C. Tank: Glass lined welded steel with single flue passage, flue baffle and draft hood; thermally insulated and encased in corrosion-resistant steel jacket; baked-on enamel finish; floor shield and legs.

D. Controls: Automatic water thermostat and built-in gas pressure regulator; temperature range adjustable from 120 to 170 degrees F (49 to 77 degrees C), cast iron or sheet metal burner, safety pilot and thermocouple.

E. Accessories: Provide:
   1. Water Connections: Brass.
   2. Dip Tube: Brass.
   3. Drain Valve.
   4. Anode: Magnesium.
   5. Temperature and Pressure Relief Valve: ASME labeled.

END OF SECTION

SECTION 22 4000
PLUMBING FIXTURES AND PIPING

PART 1 GENERAL $_____

1.01 PRICE AND PAYMENT PROCEDURES

PART 2 PRODUCTS

2.01 SINKS

A. Kitchen Sink: Remove existing sink to code legal dump.
   1. Sink: Install a 22 gauge 33"x22"x8" double bowl, stainless steel, self rimming kitchen sink. Manufacturer: Moen, Model number 2212, or like product to be approved by Project Manger
   2. Faucet: Manufactured by Moen, Model 7825 or like product to be approved by Project Manager
      a. Flow Rate: 2.0 GPM maximum

B. Laundry Tub: Remove existing sink to code legal dump.
   1. Sink: Install single bowl, 24" fiberglass laundry tray to fin under faucet.
   2. Faucet: 1.5 GPM

C. Bathroom Vanity:
   1. Sink: 31 inch solid recessed oval bowl vanity top Manufactured by Imperial Marble. Model number RCxx22SPW
   2. Faucet: Single lever faucet with 1.5 GPM maximum flow rate
      a. High Arch Faucet: Manufactured by Moen, Model number (Nickel) CA84003CBN

2.02 DUAL FLUSH TOILET

A. Dual Flush Water Closets: ASME A112.19.14; high efficiency and low consumption, vitreous china, dual flush, tank type.
   1. Bowl: Elongated.
   2. Flush Actuator: Manufacturer's standard.
   3. Rough in: 12 inch (305 mm).
   4. Seat: Manufacturer's standard or recommended elongated closed front seat with lid.
   5. Color: White.

2.03 BATHTUBS

A. Bathtub: ASME A112.19.4M porcelain on steel bathtub with slip resistant surface, contoured front apron, 60 inches (1500 mm) long,

B. Bath and Shower Trim: ASME A112.18.1; concealed shower and over rim supply with diverter spout, pressure balanced mixing valve, bent shower arm with adjustable spray ball joint showerhead with maximum 1.5 gallons per minute (5.6 liters per minute) flow and escutcheon, lever operated pop-up waste and overflow.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install each fixture with trap, easily removable for servicing and cleaning.

B. Install new PVC or ABS waste and vent piping from basement to kitchen sink, all bathroom fixtures, and laundry sink.

C. Install flexible PEX piping with a minimum number of coupling to all fixtures (all vertical and horizontal runs). Install mechanical connectors and shut off valves if appropriate for each fixture.
   1. Six pipe to 1990 CABO minimums per table 2406.5
   2. Include clothes washer hook up.

D. Furnish and install all water piping and shut-off valves necessary to complete work.

E. Retrofit the water meter to comply with existing code.

F. Install components level and plumb.

G. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07 9005, color to match fixture.

H. Seal around plumbing penetrations in all exterior surfaces, surfaces that border on unconditioned species, between floors, and throughout the exterior of the building.

I. Clean out basement floor drain at end of construction period and verify operation and function.
   1. Install new drain cover.

3.02 LOCATIONS

A. Exterior:
   1. Hose bibb - located east side of home.

B. Basement:
   1. Floor drain to be installed before new concrete floor poured.
   2. Domestic Water
   3. Water Heater

C. Main Level:
   1. Kitchen:
      a. Kitchen Sink
      b. Dishwasher
   1. Bathroom:
      a. Dual Flush Toilet
      b. Vanity Sink
      c. Bath Tub/Shower
   3. Laundry Room
      a. laundry tub
      b. laundry appliance hook-up

D. Second Floor
   1. Bathroom:
      a. Dual Flush Toilet
      b. Vanity Sink (double)
      c. Bath Tub/Shower

END OF SECTION

SECTION 23 0000
RESIDENTIAL VENTILATION

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 BATHROOM VENT FAN/LIGHT FIXTURE:

A. All vent fans shall be energy star rated ceiling mounted fan/light fixtures rated for a minimum 100 watt exterior ducted vent fan capable of a minimum of 80 CFM

B. Product: NuTone QTREN080FLT or like product to be approved by the Project Manger

C. Switch: Light and fan shall use same switch with a time delay for fan such as the EFI/Light Time Delay Switch Part # 5100.505 or equipped with a humidistat sensor.

D. Ducting: Install 4" metal duct and vent to the exterior ideally through a gable end using a 4" hooded vent with damper.
   1. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
   2. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.

2.02

2.03 DUCT ASSEMBLIES

A. Low Pressure Supply (Heating Systems): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

B. Low Pressure Supply (System with Cooling Coils): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

C. General Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

D. Kitchen Cooking Hood Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

2.04 DUCTWORK FABRICATION

A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.

B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

D. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.

2.05 KITCHEN HOOD EXHAUST DUCTWORK

A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, SMACNA Kitchen Ventilation Systems and Food Service Equipment Fabrication & Installation Guidelines and NFPA 96.

PART 3 EXECUTION

3.01 INSTALLATION

END OF SECTION

SECTION 23 5400
FORCED AIR FURNACE AND DUCTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.

B. Product data indicating Heating, Cooling equipment and Ducts are in compliance with Air Conditioning Contractors of America (ACCA) Manuals, Parts J, S, and D. Alternate Compliance paths are as Follows:
   1. ASHRAE Handbooks

1.02 WARRANTY

A. Provide three year manufacturers warranty for solid state ignition modules.

B. Provide five year manufacturers warranty for heat exchangers.

C. Provide five year manufacturers warranty for electronic air cleaners.

PART 2 PRODUCTS

2.01 GAS FIRED FURNACES

A. Annual Fuel Utilization Efficiency (AFUE): 0.95 ("condensing").

B. Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, supply fan, heating element, controls, air filter, humidifier, and accessories; wired for single power connection with control transformer.
   1. Safety certified by CSA in accordance with ANSI Z 21.47.
   2. Venting System: Direct.
   3. Combustion: Sealed
   4. Air Flow Configuration: Upflow.
   5. Heating: Natural gas fired.

C. Performance:
   1. HVAC contractor will be responsible to determine heat load using Manual J.

D. Cabinet: Steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.

E. Primary Heat Exchanger:
   1. Material: Hot-rolled steel
   2. Shape: Tubular type.

F. Secondary Heat Exchanger:
   1. Material: Aluminized steel.
   2. Coating: Polypropylene.

G. Gas Burner:
   1. Atmospheric type with adjustable combustion air supply,
   2. Gas valve , two stage provides 100 percent safety gas shut-off; 24 volt combining pressure regulation, safety pilot, manual set (On-Off), pilot filtration, automatic electric valve.
   3. Electronic pilot ignition, with electric spark igniter.

H. Supply Fan: Centrifugal type rubber mounted with direct drive with adjustable variable pitch motor pulley.

I. Motor: Refer to Section 22 0513; 1750 rpm two-speed, permanently lubricated , hinge mounted.

J. Air Filters: 1 inch (25 mm) thick glass fiber, disposable type arranged for easy replacement.

K. Ducts: Install all new supply and return air ducting to code.

1. Ducts SHALL not be installed to attic for distribution to upper floor.
2. Supply and returns shall not be installed in ceilings.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with NFPA 90A.

B. Install gas fired furnaces in accordance with NFPA 54.

C. Provide vent connections in accordance with NFPA 211.

D. The Contractor shall have all HVAC ducting cleaned by a professional duct cleaning company after all interior repairs are completed inside the house.

E. Ducts shall not be installed in unconditioned space, such as the attic, for distribution for second floor.

END OF SECTION

SECTION 23 6213
FORCED AIR A/C

PART 1 GENERAL $_____

1.01 SUBMITTALS

A. Product Data: Provide rated capacities, weights specialties and accessories, electrical nameplate data, and wiring diagrams. Include equipment served by condensing units in submittal, or submit at same time, to ensure capacities are complementary.

B. Design Data: Indicate pipe and equipment sizing.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

A. Units: Self-contained, packaged, factory assembled and pre-wired units suitable for outdoor use consisting of cabinet, compressors, condensing coil and fans, integral sub-cooling coil, controls, liquid receiver, wind deflector, and screens.

B. Performance Ratings: Seasonal Energy Efficiency Ration of 16

2.02 CASING

A. House components in welded steel frame with galvanized steel panels with weather resistant, baked enamel finish.

2.03 CONDENSER COILS

A. Coils: Aluminum fins mechanically bonded to seamless copper tubing. Provide sub-cooling circuits. Air test under water to 425 psig (2900 kPa), and vacuum dehydrate. Seal with holding charge of nitrogen.

2.04 FANS AND MOTORS

A. Weatherproof motors suitable for outdoor use, single phase permanent split capacitor or 3 phase, with permanent lubricated ball bearings and built in current and thermal overload protection. Refer to Section 23 0513.

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide piping for refrigeration system as required.

B. Provide connection to refrigeration piping system and evaporators. Refer to Section 23 2300. Comply with ASHRAE Std 15.

END OF SECTION

SECTION 26 0001
POWER, WIRING AND DEVICES

PART 1 GENERAL $_____

1.01 SUMMARY OF BULLETIN 80-1 (PROPERTY MAINTENANCE CODE)

A. All hazardous, improper and/or illegal wiring shall be removed or required to the present Electrical Code. This will include other buildings on the property such as garages, sheds, etc.

B. Minimum size for all new services for single residential occupancies shall be 100 ampere, 240 Volt.

C. No additions or extensions will be allowed on an existing ampere services.

D. The Following are minimum requirements for new service installation:

1. **Electrical outlets required:** Every habitable room 120 square feet or less in area, of a dwelling or dwelling unit of a multiple dwelling shall contain at least two separate and remote duplex outlet shall be required for each additional 80 square feet or fraction thereof. Most new outlets must be Arc-Fault Circuit Interrupters (AFCI) protected according to Section 210.12 of the 2008 National Electrical Code.
2. **In Kitchens:** Three separate and remote duplex outlets shall be required. At least one of the required duplex outlets shall be supplied by a separate twenty ampere circuit. Any new receptacle installed for the counter top shall be of the Ground Fault Circuit Interrupter (GFCI) type.
3. **Every public hall, water closet compartment, bathroom, laundry room and furnace room must contain at least one electric light fixture.** In addition to the light fixture, every bathroom and laundry room must have at least one duplex outlet. The required duplex outlet in each laundry room must be on a separate twenty ampere circuit. The required duplex outlet in each bathroom must be of the (GFCI) type. Any existing outlets in any bathroom must be converted to a GFCI-protected outlet or removed. The required GFCI outlet in the bathroom must be immediately adjacent to the sink. If a bathroom is added or gutted as part of the update, a 20 ampere circuit will be required per NEC 210.11(C)(3).
4. **Every common hall and inside stairway** in every residential structure or dwelling unit shall be adequately lit with an illumination of at least five lumens per square foot in the darkest portion of the normally traveled stairs and passageways.
5. **All exterior exits and entryways** are required to be illuminated a minimum of one footcandle at grade level for security.
6. **Exterior lighting** at garages is required to be adequate so as to not endanger health or safety. An average of one footcandle at the pavement is required. Exterior lighting must be in conformance with other city codes.
7. **Basement:** One lighting outlet is required for each 200 square feet of floor space. At least one of the required basement lighting outlets shall be switched form the head of the stairs.
8. **Smoke Detectors:**
   a. All single-family dwelling shall have a hard-wired (120 volt electrical, not battery) battery-backup smoke detector installed near (not in) the bedrooms. If there are legal bedrooms on more than one level, the detector shall be installed on the level that has the greater number of bedrooms. If there are an equal number of bedrooms on more than one level, the detector shall be installed on the upper level near the bedrooms.
   b. If the project includes building construction that requires a Building Permit, additional hard wired interconnected and/or battery-type smoke detectors are required per the Building Code.
9. **Metallic Light Fixtures (Luminaries):** If within five feet horizontally or eight feet vertically of grounded surfaces (metallic piping, concrete floor, etc.) must be grounded.
10. **Residential Closet Lights:** All closet lights must either be a florescent fixture(luminaire) or an enclosed incandescent fixture of the types required by the present Electrical Code. Fixtures must not be directly over the storage area in a closet; they must either be moved or eliminated and blanked off.

11. **Service conduits run in outside walls:** If a 100-ampere service is changed from fuses to circuit breakers, the meter is already outside, and the existing conduit is run in the outside wall, the conduit may be re-used. If the service is an upgrade (increase in amperage), conduit in the wall may not be re-used.

1.02 SECTION INCLUDES:

A. Rewire house to code

B. Overhead Garage Door Opener: see Section 08 3323

C. Certify Electrical Distribution: Electrician shall inspect all exposed wiring, motors, fixtures and devices for malfunction, shorts and hosing code compliance. Non-functioning and dangerous equipment and wiring shall be replaced

D. Replace existing electrical service with a residential, 150 amp, single phase, 3 wire electric service to the basement.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Conduit and Cable: Provide materials that meet code requirements.

B. New Service: Include a main disconnect, 22 circuit panel board, meter socket, weather head, service cable, and ground rod and cable. Seal exterior service penetrations.
   1. New service panel shall conform to the BOCA Existing Structures code.

C. Devices and Coverplates: Provide all White or Ivory devices per Project Managers Selection. Provide heavy duty residential grade devices.

D. Smoke/CO Detectors: Hard wired w/ battery-back up type units

E. Doorbell system: System containing a low voltage transformer, power connection, buzzer and front door button.

F. Equipment Wiring: Provide the correct power supply on separate circuit, with over current protection including all connecters for the Water Heater, Boiler, Microwave, Refrigerator, and Dishwasher.
   1. Kitchen Receptacles to be 20 amp Circuits:
      a. Install small appliance circuits along counter tops to code.
         1) Evenly dividing the number of countertop appliance receptacles between 2 circuits.
         2) GFCI receptacles when they fall within 6 feet of sink.
      b. Individual circuits for permanently installed appliances; range, dishwasher, exteriorly vented Microwave with Rangehood and refrigerator to code.

G. Bathroom Vent Fan/Light Fixture: Shall be Energy Star rated ceiling mounted fan/light fixture rated for a min 100 watt exterior ducted vent fan capable of a minimum of 80 CFM
   1. Product: NuTone QTREN080FLT or like product to be approved by the Project Manger
   2. Switch: Light and fan shall use same switch with a time delay for fan such as the EFI/Light Time Delay Switch Part # 5100.505 or equipped with a humidistat sensor.
   3. Ducting: Install 4" metal duct and vent to the exterior ideally through a gable end using a 4" hooded vent with damper.
      a. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
      b. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.

H. GFCI Receptacles: Install flush mounted, ground fault circuit interrupted ivory duplex receptacle adjacent to lavatory using copper Romex.

2.02 MATERIALS

A. All materials shall be UL approved and/or National Electrical Code rated.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Building Codes: The extent of electrical work indicated in the Scope of work is stated generally to indicate end result of work. The Contractor is responsible for making a thorough inspection of the site to determine the full extent of work required to achieve the end results. All electrical work must meet current building code requirements and must pass City of Saint Paul field inspection. Any work that does not meet codes or pass inspection must be corrected to the satisfaction of the city inspector at no additional cost to the Owner.

C. Remove and dispose of all abandoned wiring and devices. Modify existing wiring and devices as indicated.

D. All new wiring, when passing through living areas, shall be concealed.

E. All new recepticals and switches

F. All new outlet covers: Ivory

G. All drilling, cutting and fastening shall be neat and true, and shall not critically damage framing members.

H. All patching shall match the surrounding surface.

3.02 LOCATIONS

A. Throughout
   1. House- house was duplex and had two separate services, remove and create a single service
   2. Garage

END OF SECTION

SECTION 26 5101

HRA LIGHTING

PART 1 GENERAL $_____

1.01 PRICE AND PAYMENT PROCEDURES

PART 2 PRODUCTS

2.01 INTERIOR LIGHTING

A. Royce Lighting
   1. Product Series: Valhalla, Heirloom Bronze Finish
      a. 3 Light Flush Mount: Model RFM2247
      b. 2 Light Wall Sconce: Model RW2247
      c. 3 Light Semi Flush Mount: Model RSF2247
      d. Mini Chandelier: RMC2247
      e. Mini Pendant: RC2247
      f. 4 Light Vanity: Model RV2247

B. Other Acceptable Manufacturers: To be approved by Project Manager

2.02 EXTERIOR LIGHTING

A. Garages: DualBrite 300 watt motion security light with shields: Model SL-5318-WH-D

B. Exterior Pendants:
   1. Patriot Lighting
      a. Shaker Cove Mission Estar

C. Exterior Flush Mount
   1. Patriot Lighting
      a. Mission

2.03 BASEMENT LIGHTING

A. Stairway: One fixture on stairway landing and one at the bottom of the stairway. Once switch at the top of the basement stairway to control these two lights.

B. Additional ceiling mounted pull chain lights in various location throughout the basement where necessarily.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. All new wiring when passing through living areas shall be concealed.

C. Wire mold and surface mount boxes for receptacles.

D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaries.

3.02 LOCATIONS

A. BASEMENT:
   1. Replace all with new pull chain porcelain fixtures.

B. MAIN LEVEL: (center all fixtures in rooms)
   1. Foyer - Ceiling fixture, wall switch at latch side of door.
   2. Living-room - Ceiling fixture, switches at front entry doorway.
   3. Kitchen - Ceiling Mounted
   4. Pantry - ceiling light, wall switch
   5. Stairway to basement- ceiling light on 1/2 up landing, switch at top.
   6. Dining Room-ceiling mounted
   7. Laundry Room-ceiling mounted
   8. Hall for laundry room/bathroom

9. Bathroom - Vanity Light, wall switch. Fan/Light combo, wall switch.

C. UPPER LEVEL: (center all fixtures in rooms)
   1. Hall - ceiling light, wall switch at top of stairs & in hallway at bathroom
   2. Bedroom 1 - Ceiling fixture, wall switch.
   3. Bedroom 2 - Ceiling fixture, wall switch.
   4. Bedroom 3 - Ceiling fixture, wall switch.
   5. Master Bedroom-Ceiling fixture, wall switch
   6. Bathroom - Vanity Light, wall switch. Fan/Light combo, wall switch

D. EXTERIOR:
   1. Front entry - Wall fixture, wall switch
   2. Rear entry - wall sconce, wall switch

END OF SECTION

SECTION 28 1600
INTRUSION DETECTION

PART 1 GENERAL $_____

1.01 SUMMARY

A. Provide and install a security system, to include a minimum of hardwired control panel with cellular transmitter (no phone line required), 2 hardwired keypads, two (2) Door sensors, motion detector, low temperature monitoring and siren.

B. Include a monthly monitoring service at a rate not to exceed $50/month.

C. Contracts for monitoring must be month to month, not an extended period.

D. Monitoring shall begin upon completion of construction and be paid by Owner.

1.02 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.01 ALARM CONTROL PANEL

A. Control Panel: Modular construction with surface wall-mounted enclosure.

B. Power supply: Adequate to serve control panel modules, remote detectors, and alarm signaling devices. Include battery-operated emergency power supply with capacity for operating system in standby mode for 24 hours.

2.02 INITIATING DEVICES

A. Magnetic Switches:

B. Motion Detectors:

2.03 SIGNAL DEVICES

A. Alarm Bells: NFPA 72, electric single stroke, 8 inch (200 mm) bell with operating mechanism behind dome. Sound Rating: 81 dB at 10 feet (3 M).

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use 18 AWG minimum size conductors for detection and signal circuit conductors. Install wiring in cable.

C. As soon as System is installed contact HRA Project Manager Insert HRA PM's Name by email at Insert HRA PMs email to inform him/her to apply for a security permit.

3.02 CLOSEOUT ACTIVITIES

A. Demonstrate normal and abnormal modes of operation, and required responses to each.

END OF SECTION

SECTION 31 2200
GRADING

PART 1 GENERAL $_____

PART 3 EXECUTION

2.01 ROUGH GRADING

A. When excavating through roots, perform work by hand and cut roots with sharp axe.

2.02 FINISH GRADING

A. Build up ground slope at foundation wall using clean fill.

B. New fill shall have an approximate slope of 1/12 and extend away from the foundation wall approximately five feet.

C. Adjust window wells for new slope.

D. Remove roots, weeds, rocks, and foreign material while spreading.

E. Vigorously tamp or roll new fill to achieve settled depth.

F. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.

2.03 LOCATIONS

A. See Landscape Plan.
   1. This plan does include a raingarden

END OF SECTION

SECTION 32 1313
CONCRETE PAVING

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 PAVING ASSEMBLIES

A. Concrete Sidewalks and Median Barrier: 3,000 psi (20.7 MPa) 28 day concrete, 4 inches (100 mm) thick, buff color Portland cement, exposed aggregate finish.

2.02 FORM MATERIALS

A. Wood form material, profiled to suit conditions.

PART 3 EXECUTION

3.01 FORMING

A. Place and secure forms to correct location, dimension, profile, and gradient.

3.02 COLD AND HOT WEATHER CONCRETING

A. Follow recommendations of ACI 305R when concreting during hot weather.

B. Follow recommendations of ACI 306R when concreting during cold weather.

3.03 FINISHING

A. Sidewalk Paving: Light broom, texture perpendicular to direction of travel with troweled and radiused edge 1/4 inch (6 mm) radius.

B. Curbs and Gutters: Light broom, texture parallel to pavement direction.

3.04 LOCATIONS

A. See Landscape Plan

B. Remove Curb Cut, due to removal of driveway. Install new Curb and Gutter.

END OF SECTION

SECTION 32 9223
SODDING

PART 1 GENERAL $_____

PART 2 PRODUCTS

2.01 MATERIALS

A. Sod: TPI, Certified Turfgrass Sod quality; cultivated grass sod; type indicated in plant schedule on Drawings; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft (100 sq m). Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.

PART 3 EXECUTION

3.01 LAYING SOD

A. Moisten prepared surface immediately prior to laying sod.

B. Lay sod immediately after delivery to site to prevent deterioration.

C. Lay sod smooth and tight with no open joints visible, and no overlapping; stagger end joints 12 inches (300 mm) minimum. Do not stretch or overlap sod pieces.

D. Water sodded areas immediately after installation. Saturate sod to 4 inches (100 mm) of soil.

3.02 MAINTENANCE

A. General Contractor is responsible for the maintenance of sod until project closeout.

3.03 LOCATION

A. See Landscape Plan

B. Site Work, as needed. (no bare soil permitted)

END OF SECTION

SECTION 32 9300
PLANTS

PART 1 GENERAL $\$$_____

1.01 PRICE AND PAYMENT PROCEDURES

A. Allowances: See Section 01 2100 - Allowance of $1500 for plants, mulch and other material included in Landscape Plan.

B. This allowance does not cover sod or materials for a retaining wall.

PART 2 PRODUCTS

2.01 PLANTS

A. Plants: Species, size and quality identified in Landscape Plan, grown in climatic conditions similar to those in locality of the work.

2.02 MULCH MATERIALS

A. Mulching Material: Hardwood species wood shavings, free of growth or germination inhibiting ingredients.

PART 3 EXECUTION

3.01 RAINGARDEN INSTALLATION

A. Remove 18 inches of soil leaving compacted 1 to 1 side slopes rising to finished grade.

B. Deeply till and break apart basin floor beyond compaction.

C. Add 2 inches of leaf compost and till into soil.

D. Finish Raingarden by hand grading a flat, level basin and 2 to 1 side slope, as indicated on Landscape Plan.

E. Add 2-inches of shredded hard wood mulch, as with slopes

F. Install edging as indicated on Landscape Plan.

G. Ensure that downspout runoff enters the raingarden.

3.02 PLANTING

A. Set plants vertical according to the Landscape Plan.

B. Saturate soil with water when the pit or bed is half full of topsoil and again when full.

3.03 MAINTENANCE

A. Provide maintenance at no extra cost to Owner; Owner will pay for water.

3.04 LOCATION

A. As indicated by the Landscape Plan

END OF SECTION